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HP Professional

THE INDEPENDENT MAGAZINE FOR NEWWAVE COMPUTING ▲ VOL.6 NO.9

SEPTEMBER 1992 ▲

NEW WAVE

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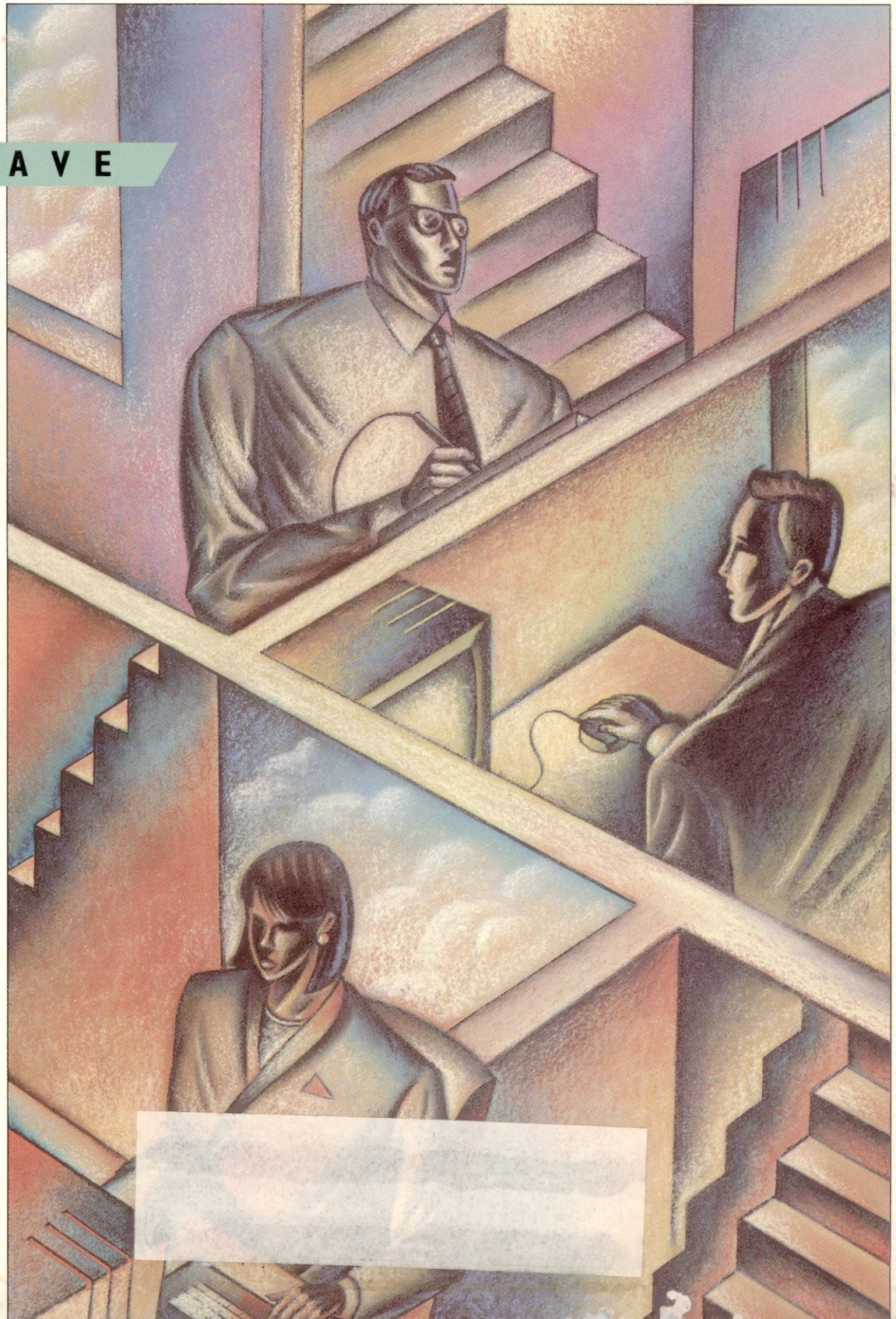
- Star Tech: Enterprise Networks Go Where No LAN Has Gone Before
- Progress Software's Fast Track Speeds Development Efforts
- HP 3000 Managers Seek Software Licensing Alternatives



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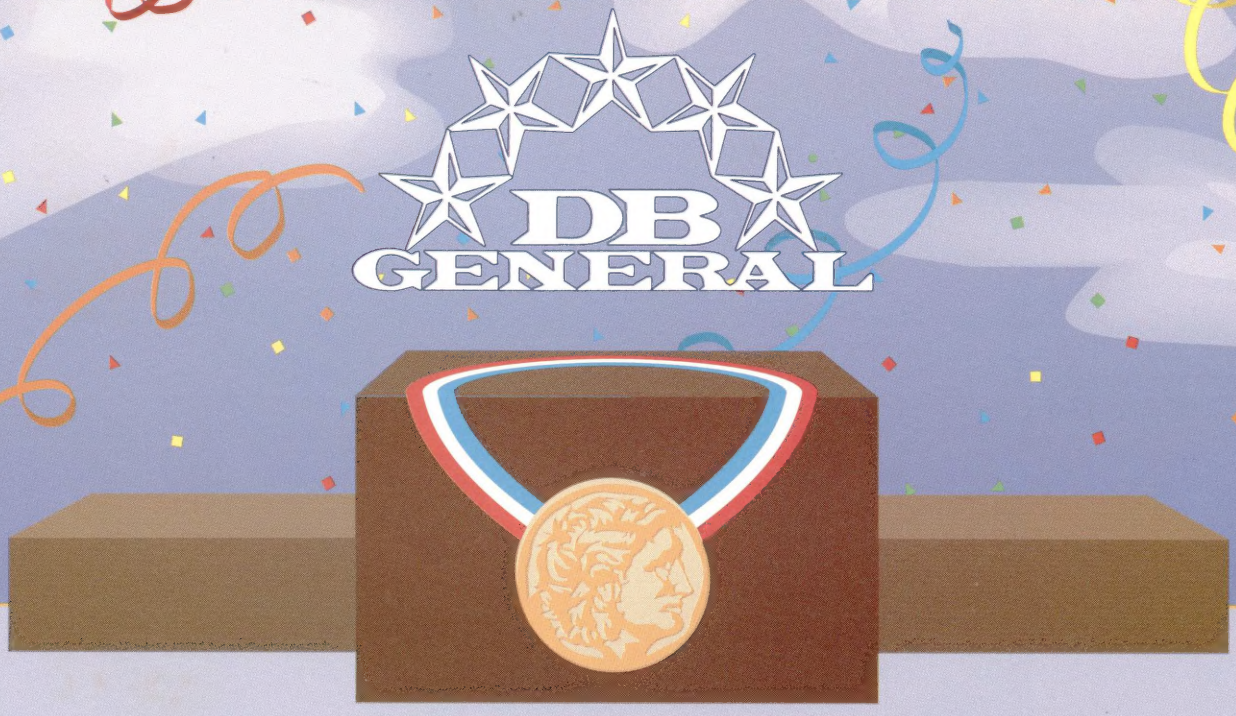

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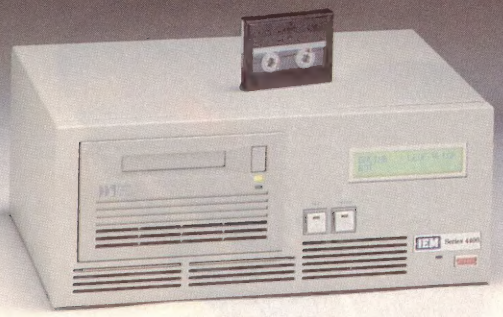

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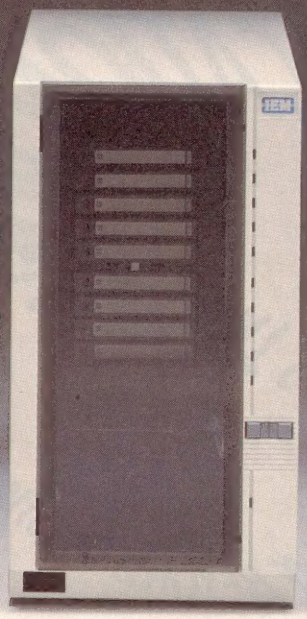

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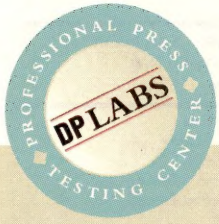

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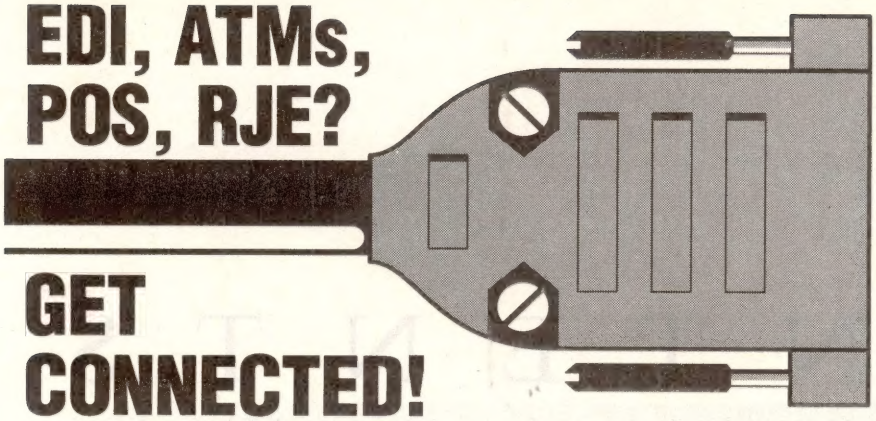

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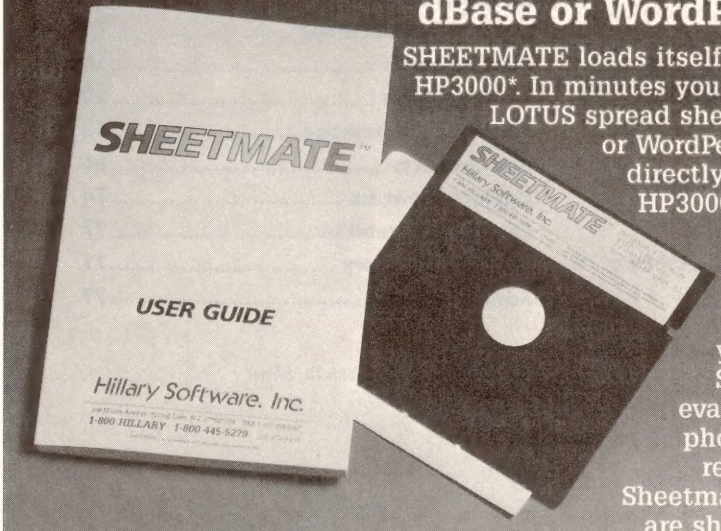

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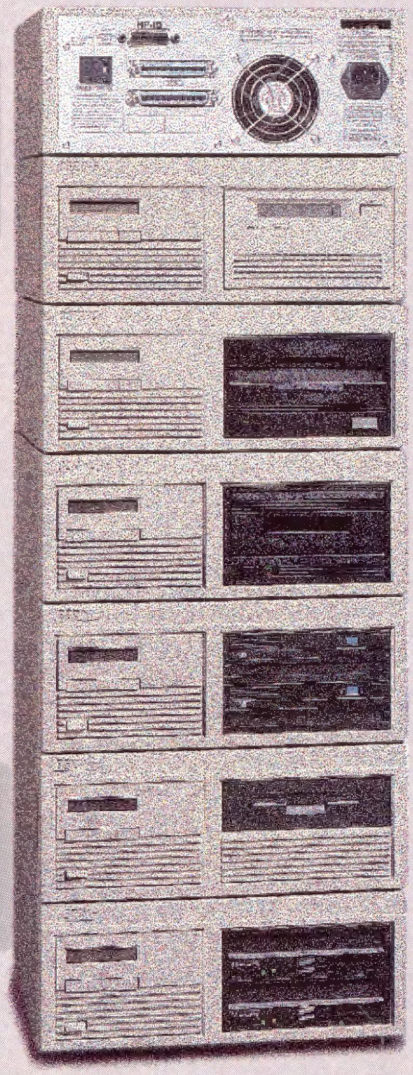

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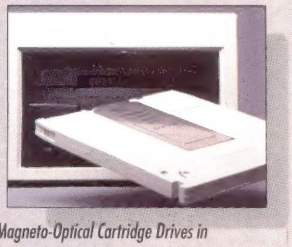

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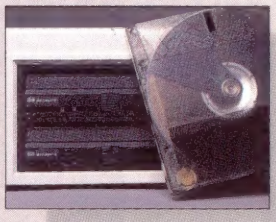

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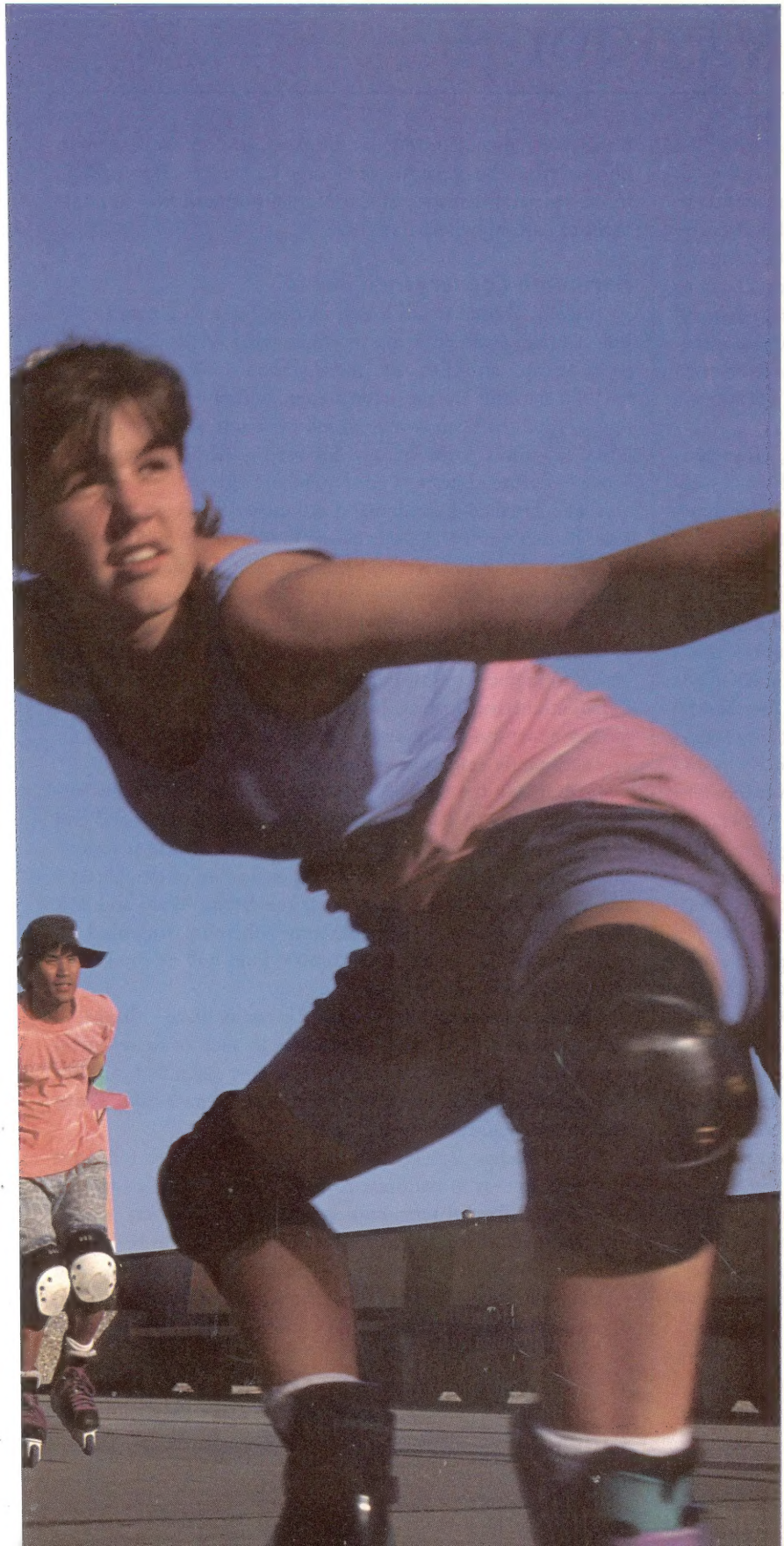

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The Leading Vendor

By Don Marks

It sure is good to be back. For the last several months, I've been working as an industry analyst and contributor to a number of trade press publications—including this one. I hope to bring my experience in the larger world back to the editorial desk of this magazine and to share with you some of the information I've gathered in my discussions with technology managers throughout the U.S. and in Europe.

Outside the HP market, other vendors are scrambling to provide similar solutions to those already supplied by HP. Digital struggles mightily to overcome internal turmoil and deliver its much-ballyhooed Alpha RISC chip without further delays. IBM races to outfit its RS/6000 workstation boxes with the functionality of a commercial multiuser UNIX system. And Unisys strives to provide a mainframe alternative of its own, complete with a gussied up version of USL's Tuxedo transaction monitor—dubbed, of course, OpenOLTP.

But Hewlett-Packard, for its part, continues to foreshadow the direction other large vendors will take. The recent reorganization of HP's Computer Systems Operation (See News and Trends, p. 14) perhaps best portends what the future holds—not only for HP customers but for the industry as a whole.

As part of the new CSO, Rich Sevcik, formerly general manager of the Commercial Systems Division, takes charge of a new Systems and Servers Group, which includes both the HP 3000 and HP 9000 product lines. Sevcik, well-respected in the HP 3000 community for his dogged defense of "open proprietary" systems, worked his way up through the UNIX side of HP's business before assuming responsibility for the HP 3000.

Wim Roelandts, who steps into Lew Platt's shoes as chief of the CSO, also has staked his career on HP's drive for recognition as a leader in open systems. And even Platt himself has been closely associated with HP's foray into UNIX, making it a point to personally launch the Series 700 workstation products that put HP back on the desktop map.

Clearly, HP has stacked its upper management tier with people whose careers are tied directly to HP-UX and open systems. And that's a strong indication that the company's leveraged hardware strategy and the ongoing convergence of its two midrange product lines are paying off.

This is not the case—at least not yet—at other major vendors. In Digital's latest shakeup, for instance, Robert Palmer, a manufacturing manager and efficiency expert, replaced the retiring Ken Olsen. At IBM, the brightest star on the leadership horizon since the departure of George Conrades is Bob LaBant, former general manager of the AS/400 business. No commitment to AIX anywhere in sight.

Harmonic Convergence Ahead?

At present, Digital is still losing market share to HP and IBM. Like George Bush courting the right-wing of the Republican party, it can't afford to talk liberally about UNIX while losing its VMS faithful. By the same token, without RISC technology, Digital has been unable to sell even into its own installed base. Its focus must be on delivering Alpha-based VMS boxes —before customers go somewhere else.

Once installed-base demand is satisfied, however, Digital must branch out. POSIX-compliant VMS together with support for Ultrix (or Windows/NT) both running on one Alpha architecture will be the way to do it. Sounds familiar, doesn't it?

IBM's proprietary installed base, on the other hand, thrives at the expense of what used to be Big Blue's bread and butter—mainframe systems. For IBM, the AS/400 serves as a mainframe alternative of sorts. If the customer won't buy an egregiously expensive mainframe upgrade, perhaps they'll settle for an exorbitantly expensive midrange system.

Introducing the RS/6000 and commercial UNIX to this audience will save IBM's customers considerable money—and cost IBM considerable revenue. Nonetheless, the market is forcing the company's hand. Commercial repositioning of the RS/6000 was as inevitable as the collapse of the Berlin Wall, and AIX business servers are already attracting adherents. Increased leverage across the AS/400 and RS/6000 lines will be the logical result. And this, too, has a familiar ring.

Perhaps a harmonic convergence is taking place—thanks, in part, to open systems. New customers in each of these different markets want the same things: low-cost systems to support commercial applications, rapid performance upgrades and, above all, interoperability with existing systems.

The challenge for Hewlett-Packard now—and its followers in the future—is to continue to *make* money while customers *save* money. Painful restructurings currently underway at IBM and Digital illustrate that this is no easy task. And, as HP's third quarter earnings decline proved, even the industry leader, with its lean, leveraged, low-overhead strategy, can fall prey to the price-slashing shock treatment of the open systems revolution.

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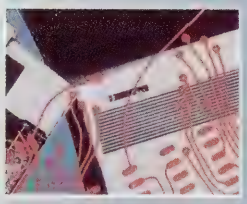

EUROPEAN WATCH

Marsha W. Johnston

Europe's Best Bargains

For the last couple of years the global recession has plagued several countries in Europe with varying degrees of severity. Its indicators, such as job layoffs and slowed commercial activity, have been recorded in the United States, France, Italy and Spain.

Last year, France endured a significant recession, with a rising unemployment rate that alarmed the populace. Although first quarter figures for 1992 indicated a return to economic growth, business managers in the trenches don't see it. In a late June survey of chief executives at small- and medium-sized enterprises in both the commercial and industrial sectors, 87 percent said they have seen no sign of recovery at their companies.

On The Cheap

In a sluggish economic environment, one rule of computer industry marketing holds supreme sway: The cheaper the workstation, the easier it is to sell.

Sun Microsystems recognized the potential for entry-level RISC-based workstations in 1989, just as the world economy and the computer industry began to slow. It presented the preconfigured, easy-to-install SPARC-1.

Sun's gamble has paid off in Europe.

In 1991, says Dataquest, Sun shipped a total of 50,000 workstations in Europe, whereas HP shipped only 31,000. More than half of Sun's 1991 unit shipments (27,400) were entry-level machines, which Dataquest defines as machines of up to 26 specmarks that cost up to $15,000. That number gave Sun 38 percent of the total entry-level market of 72,000 units. HP's share of that market segment comprised 11,300 units, or 16 percent.

The gap between Sun and HP, when measured by revenue, narrows a little. For the total workstation market, the total end user revenue (price paid by the user for an average configuration) accrued to Sun in 1991 was $939 million, versus $881 million for HP. For entry-level systems, European users spent a total of $987 million, of which Sun got $327 million or 33 percent and HP $214 million, or 22 percent.

Last year HP's workstations sold at a higher average price ($28,000 vs. $18,700 for Sun) because HP had a limited range of entry-level workstations, says Paris-based Dataquest Europe analyst Karen Benson. At that level, she says, HP had only the Motorola-based Series 400, which has slower performance than its RISC-based counterparts. "HP was busy addressing higher end markets," she says.

Correct Response

Then, in January, HP responded to European economic realities and competitive pressure from Sun, when it introduced the Models 705 and 710 of the Series 9000 based-priced at FrF 49,836 and FrF 75,259, respectively (9,583.85 and $14,472.88 at current exchange rates).

"The 705 and 710 are much more powerful than the Series 400, but they bear the price of entry-level systems. They are being well received," says Pierre Lemarchand, a founder and manager at Altis Informatique in Les Ulis, near Paris, which is one of HP's three

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workstation "grossistes" (wholesalers) in France.

"The new models help a lot," says Jean-Pierre Devivier, marketing and communications manager for ISTC, another HP's workstation "grossistes," based in Vanves, also near Paris. "They bolster the workstation line where we were not strong. They are important also because they allow us to more easily migrate users from PCs to workstations."

"HP is looking to close the [unit] gap [with Sun] with these low end machines," says Dataquest's Benson. "They appeal to the engineer who doesn't have a personal machine, who maybe shares with somebody else. Last year, someone like that with $10,000 to spend would have gone immediately to Sun, but now the situation is more competitive." Lemarchand of Altis notes that the two models seem to appeal to engineers.

"Rangewise, HP is in a fantastic position, Benson continues. "They have a strong series of RISC servers and, where they were missing entry-level machines, they have the 705 and 710. So this year should be good for HP, if they market it right. We should begin to see results at mid-year and at the end of the year."

Some sales results reported by Altis in late June already looked pretty promising. Since the 710 was available, in late January or early February, the distributor has sold 20 units, says Lemarchand. The 705 stats are even more impressive. Altis received the monochrome version of the 705 in stock in late April or early May. By late June, it had already sold 40 units and was anxiously awaiting delivery from HP of the 705 color model.

The quick movement of the 705 is ironic, says an industry source close to HP who wished anonymity, given that the company originally planned to introduce only the 710. "They decided for marketing reasons to have the 705, to have a workstation for less than $10,000," the source says.

ISTC's Devivier says the 705 is more popular because his value-added customers want "to attack the low end of the market and the 705 is easier to move, cheaper."

Overall, says Lemarchand, "I think HP will gradually want to replace the Series 400 with the Series 700. We're certainly selling more of the 700 than the 400 right now." Lemarchand's supposition is certainly true, says Benson, given the interesting migration path HP is offering to the Series 700 for the Series 400 users.

Devivier says the models are a little too new to the market to allow him to make a final judgement. Nevertheless, he is extremely optimistic.

"They haven't gotten up to top speed yet. But I think in the latter part of this year and early next year, they will start moving really quickly. Right now we're at about 100 mph, but we may get up to 200 mph later on." ■

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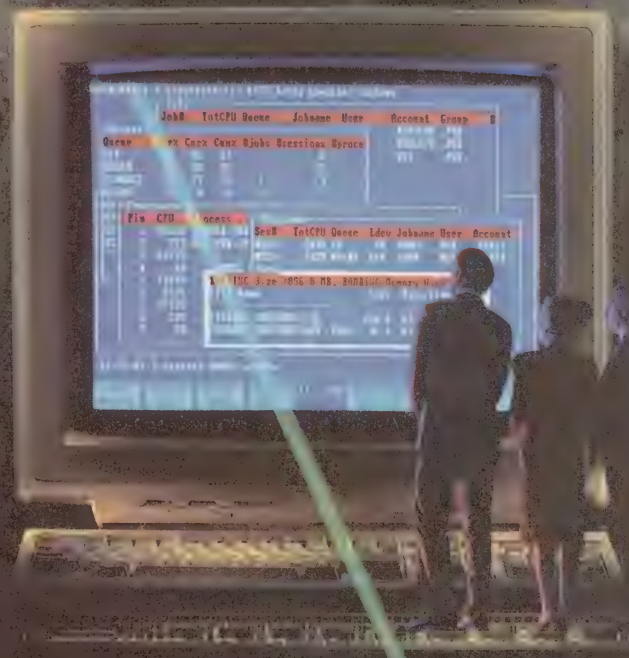

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NEWS & TRENDS

HP Defines Distributed Object Computing Environment

New Organization To Develop "Road Map" For Integration Of Networked Systems

In a move that signaled the beginning of a new phase in its multiplatform cooperative computing strategy, HP stepped up its plans to deliver what it's calling a Distributed Object-Computing Environment. This environment would permit HP users to develop applications across heterogeneous, distributed networks, without regard to operating system or hardware platform.

A new HP organization, the Distributed Object Computing Program, will assume responsibility for the development and coordination of the new computing environment. The new team's initial task is to provide current HP users with a "clear road map and migration path" to the multiplatform distributed computing paradigm HP previously discussed under the rubric of NewWave Computing.

At the core of the Distributed Object Computing Environment are what Mike Mathews, director of the program, refers to as HP's "framework products." These include HP NewWave, HP Visual User Environment (HP VUE), HP OpenView, OpenODB and HP SoftBench.

"The purpose of the new program is to combine the interoperability aspects of distributed computing with the enabling capabilities of object-oriented technology," says Mathews. This, HP hopes, will allow users to extend the benefits provided by object-oriented user interfaces, development tools and network management products across multiplatform networks.

Distributed Object Computing builds on HP's contributions to the Object Management Group (OMG) and its Common Object Request Broker Architecture (CORBA). CORBA resulted from HP's surprisingly productive collaboration with SunSoft, the software arm of HP's fiercest workstation competitor Sun Microsystems. In a joint technology submission to the OMG, HP and SunSoft delivered the Distributed Object Management Facility (DOMF), which allows the development of distributed object-oriented applications for multivendor networks. In accordance with the CORBA standard, objects can interoperate independently of hardware, operating system, user interface or network protocols.

According to Doug Dedo, product marketing manager for OpenODB, HP's object-oriented database will provide significant object management support for Distributed Object Computing. "OpenODB makes it easier for developers to write applications that can handle multimedia information such as sound or images and incorporate those objects with existing data," says Dedo.

OpenODB, which stores both code and data, provides a repository for developing and maintaining applications. Its object-oriented structured query language (OSQL) permits users to integrate existing relational database applications with new types of information in object form.

HP, Informix Join Forces On Object Technology

Informix Licenses OpenODB; HP Shares Object-Oriented Tools

HP announced that Informix Software, Inc., will become the first licensee of its object-oriented database technology, OpenODB. Informix plans to integrate OpenODB into its OnLine relational database product, which is currently available for the HP 9000 platform.

In addition, HP will also share with Informix a variety of other object-oriented technologies —including HP's object manager — which the database vendor is expected to incorporate into its HP SoftBench-based OpenCase/ToolBus environment. OpenCase/ToolBus enables software developers to support and manage graphics and

Continued on next page...

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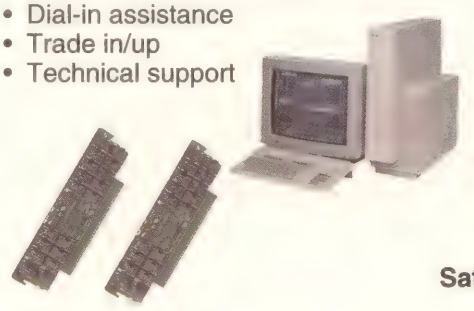

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multimedia objects such as voice and video.

Mike Wipperfeld, executive director of product marketing for Informix Tools and Environment Technology Center, says that this announcement has several important implications for Informix. "OpenODB's object manager will allow Informix to deliver a hybrid database product that will offer the semantic richness of an object-oriented database—the capability to handle complex data types and persistent objects—and at the same time provide users the benefits of dealing with Informix' relational storage manager."

According to Wipperfeld, the licensing of object technology from HP is a transitional step in Informix' plans to provide a database independent, object-oriented development environment called 4GL++. "The new environment will be a one hundred percent superset of Informix 4GL, but with many object-oriented features," Wipperfeld says.

HP's Wim Roelandts, vice president and general manager of the Networked Systems Group, hailed the announcement as a boost for both companies and their respective product lines. "HP considers Informix a key software associate in bringing object technology to new customers," says Roelandts.

Contact Informix Software Inc., (800) 274-9464.

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HP Realigns Computer Systems Organization

HP 3000 And HP 9000 Lines Consolidated Under Rich Sevcik

In the wake of John Young's retirement announcement and the selection of Computer Systems Organization chief Lew Platt as corporate President and CEO, HP has reorganized its top management tier. The new organizational structure, which dissolves the HP Networked Systems Group, creates four new business groups that will report to Wim Roelandts.

Roelandts, formerly general manager of the Network Systems Group, will succeed Platt as the head of the Computer Systems Organization. Noted for his hands-on management style, Roelandts is expected to follow Platt's lead in making HP a more aggressive force in the workstation and multiuser UNIX arenas

The four new groups reporting to Roelandts include:

- Systems and Server Group, which will assume responsibility for both the HP 3000 and HP 9000 multiuser product lines.
- Workstation Systems Group, which will comprise all aspects of HP's workstation business.
- Integrated Systems Group, which will include products and services, such as the Software Business Unit and OEM Systems Division, which require specially trained engineers.
- Systems Technology Group, which will develop a variety of system and networking software, along with other technology, for use with HP multiuser and workstation platforms.

Wim Roelandts, formerly general manager of the Network Systems Group, will succeed Lew Platt as the head of HP's Computer Systems Organization.

Also reporting to Roelandts will be worldwide sales and marketing, under the direction of Franz Nawratil, and worldwide manufacturing, under the charge of Dick Love.

Perhaps the biggest news in this announcement is the consolidation of the HP 3000 and HP 9000 systems under a single business group. The new Systems and Servers Group will be headed by Rich Sevcik, formerly the general manager of the Commercial Systems Division—the group responsible for the HP 3000.

Bernard Guidon, who headed up HP's General Systems Division, which managed the HP 9000 line, will return to HP France as the company's European marketing manager.

Since the introduction of PA-RISC in 1989, HP's MPE and HP-UX lines have been growing closer together. The underlying hardware is the same for both lines, and with the introduction of POSIX-compliant MPE/iX, the operating systems now share common APIs and system calls. HP's recent emphasis on ALLBASE as a relational database solution for both platforms indicates a further level of convergence.

But this reorganization clearly is the closest that the two lines have come to sharing the same resources and reporting structures within HP. Most analysts contend that the new arrangement can only further HP's technology leverage between the two platforms, possibly leading to their eventual integration in a single product line.—*Don Marks, Managing Editor*

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MANMAN Goes UNIX

Ask Delivers HP-UX Version Of Venerable Manufacturing Business Management System

ASK Computer Systems announced the introduction of a long-awaited UNIX version of its MANMAN manufacturing, distribution, customer service and financial management system. The new version, dubbed MANMAN/X, makes the popular package available to HP-UX users for the first time. ASK also announced that a future release of MANMAN/X will be available on POSIX-compliant operating systems including both MPE/iX and Digital Equipment Corp.'s OpenVMS.

Peter West, vice president of marketing for ASK, says MANMAN/X is designed to fuel growth in the HP-UX market. "Up to now," West says, "large manufacturers who wanted to pursue open systems via UNIX did not have the applications available to them." MANMAN/X with 27 different application modules is intended to provide an enterprise-wide information systems solution for manufacturing businesses.

The MANMAN/X announcement was shrouded in controversy thanks to reports that the product would not rely on database technology from ASK's sister company, INGRES. West denied the validity of these reports, stressing that MANMAN/X relies heavily on the INGRES Intelligent Database and allows ASK customers to take advantage of all INGRES tools and gateways. He suggested that the controversy stemmed from confusion about ASK's announced intention to support additional database platforms in the future.

According to sources within ASK, the MPE/iX port of MANMAN/X is already underway. But actual delivery of a POSIX version, which could require use of the INGRES database and toolsets on the HP 3000, is probably two years away. For now, ASK continues to target HP 3000 users with its TurboIMAGE-based MAN MAN HP product line.

Pricing for MANMAN/X ranges, depending on the number of modules purchased, from $25,000 for an eight user system to $250,000 to $300,000 for a 128 user configuration.

Contact ASK Computer Systems, 2440 W. El Camino Real, Mountain View, CA 94039; (415) 969-4442.

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For Your Information

■ Abacus Data Systems, Paul Edwards and Associates and Creative Business Solutions Inc., are the latest VAB to sign with Speedware Corp. (416) 408-2880.

■ Cranel Inc. announced an OEM agreement with Maxoptix Corp. to integrate the Tahiti II rewritable optical drive into the HP family of Optical Disk Library Systems. Cranel will offer both the HP Optical Library Systems and its own Network Optical File Servers. (614) 433-0045.

■ Object Design Inc. and Progress Software Corp. announced the signing of a strategic development and marketing agreement under which the two companies will integrate the Progress 4GL and ObjectStore ODBMS. The agreement marks the first time a 4GL has been integrated with an object-oriented database management system (ODBMS). (617) 270-9797.

■ Clarity Software concluded a major porting and distribution agreement with Sumisho Electronics of Japan. Under the agreement, Sumisho will work with Clarity to translate Rapport into Japanese, which Sumisho will market and sell in Japan. (415) 691-0320.

■ IXI Ltd. announced that the company has been named Open Software Supplier of the Year, in a competition organized by the international Open Systems consortium, X/Open and sponsored by ICL. (510) 275-0313.

■ Yvonne Smith, IS Manager at Donnelly Corp., is running for the INTEREX Board of Directors. Her objectives include promoting an understanding and usage of the Interex organization and services available to LUGs, RUGs, etc., and to influence Hewlett-Packard's business strategy based on users needs.

■ Sequoia Systems Inc., and Minx Software announced a partnership to deliver fault-tolerant computing solutions to global manufacturing companies moving to open systems for 24-hour international operations. Sequoia and Minx will jointly market Sequoia's Series 400 and Series 40 UNIX-based fault-tolerant computers running the Minxware material requirements planning (MRP II) software. (508) 480-0184.

■ Trilogy Development Group announced the licensing of its product-line configuration software tool to HP. SalesBUILDER will be used by HP's worldwide sales force to configure and quote customers orders. The software will be used initially in the sale of computer, medical, and test & analytical products and systems. (415) 321-5900.

■ d.BOARD, an electronic network of end-users, may eliminate altogether, the entire used computer brokerage industry, which the Computer Deals and Lessors Association and Gartner Group estimate to be a $7.17 billion industry. By putting end-user buyers in touch with end-user sellers over an electronic bulletin board, d.BOARD is going around the brokerage industry completely. (404) 240-0088.

■ Human Design Systems (HDS) announced a new distribution strategy for its X Window terminal products offering significantly lower end-user prices than competitive products, quick delivery, nationwide-onsite service and a money-back guarantee. The new pricing, distribution and service programs are the cornerstone elements of HDS' emergence into the growing commercial market for X Window terminals. (215) 277-8300.

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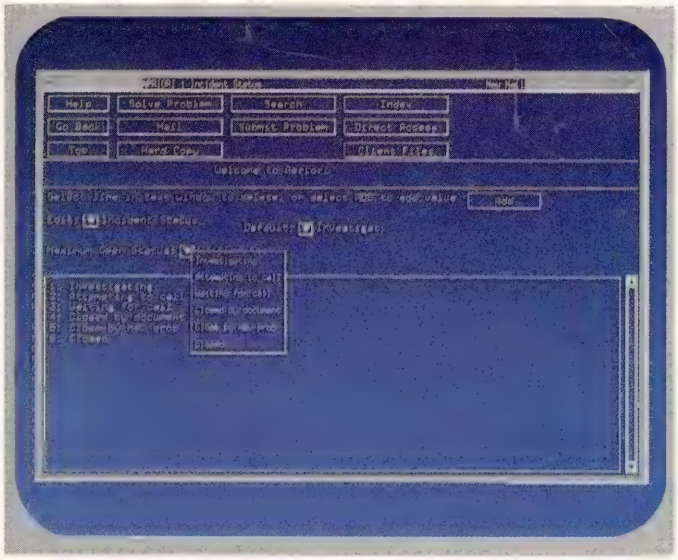
Distributed Support Sleuth



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The ability to learn how to store problems, remember what steps were taken to resolve a problem and learn related solutions to problems is made possible through Apriori's heuristic technology. This feature also makes it possible for the system to coach support staff through a problem.

Apriori's Enhanced-Intelligence engine technology incorporates modern database techniques that allow support staff to locate and cross reference answers to system problems.

Apriori's Problem Management module then lists the 12 most common solutions to the current problem. Selecting the solution most closely related to the problem provides greater levels of detail and more specific information.

Solutions also can be found through a symptom search. Support staff can enter words and phrases that best characterize the problem. Apriori will list potential solutions to match the symptoms. More detailed information can be displayed after a solution is selected.

Eighty percent or more of the problems reported can be solved on the first call. However, Apriori provides for call escalation, via a problem report, up the ladder to higher levels of support until the call is resolved.

All appropriate parties are notified of the problem's resolution via electronic mail, Apriori mail, US mail or fax. If solutions are changed or updated, anyone having experience with the call or problem are notified.

The optional Call Management package provides for call logging, tracking, reporting and queuing. Management reports reflect the performance of the support staff, which products yield the most calls, and how useful Apriori's information has been during the reporting period.

There's no need to have an expert on site or to put someone on a plane every time there's a problem out of house. Remote sites can tap into Apriori's information base using the ReadOnly module, allowing users everywhere access to the same information available in the home office.

Context-based information retrieval is accomplished through TexTrace. TexTrace provides access to online documentation via a nongraphical user interface.

Apriori is a client-server product, using standard GUIs such as Motif, OPENLOOK and Windows. Standard networking protocols such as TCP/IP, NetBIOS, DECnet, NFS and AppleTalk are also supported. Versions are available for HP 9000 Series servers and workstations starting at $40,000. — *David B. Miller, Senior Technical Editor*

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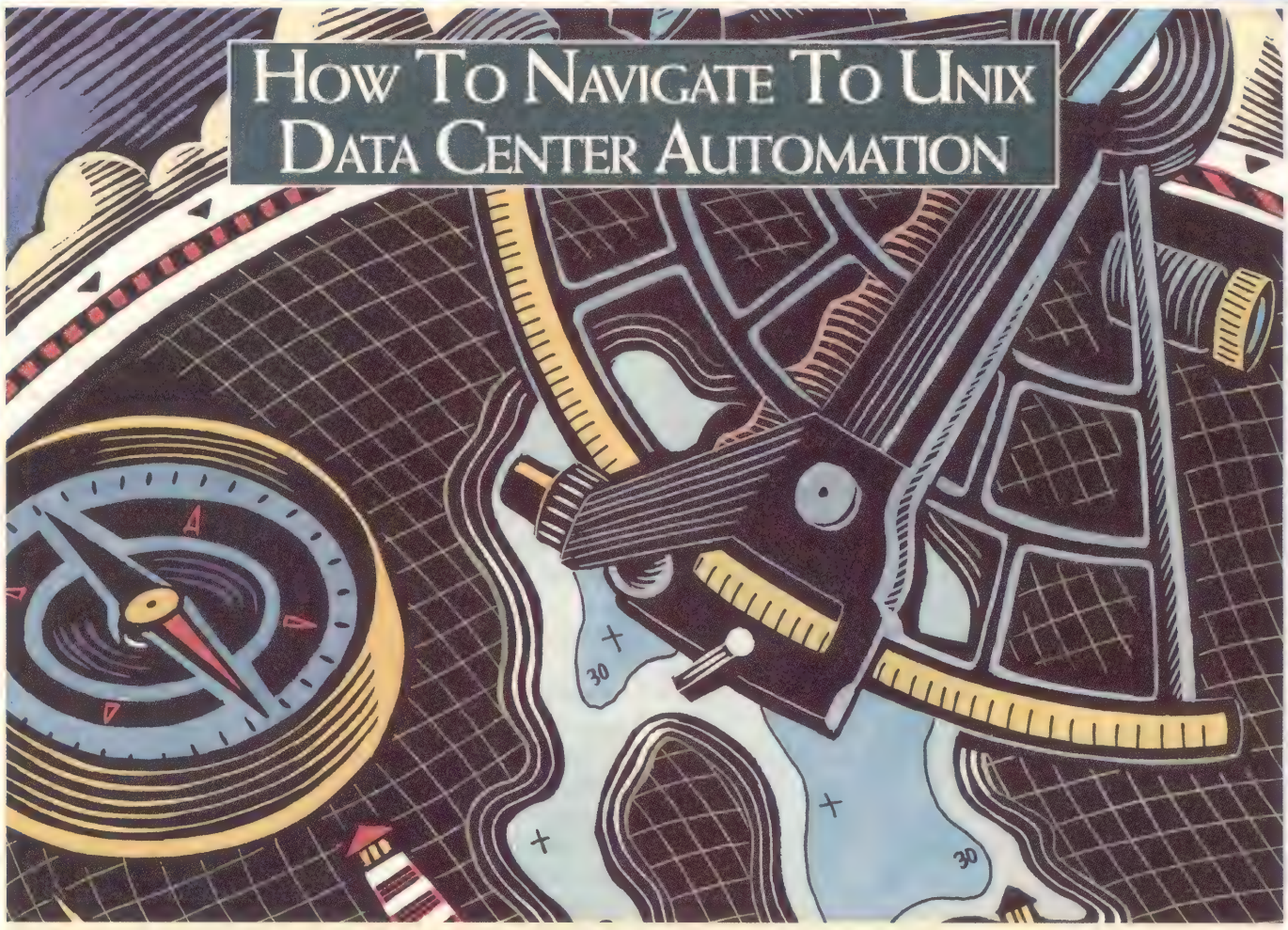

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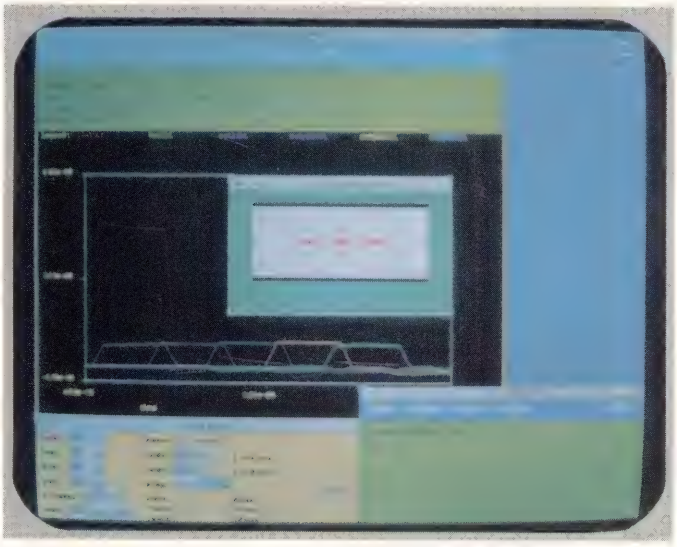

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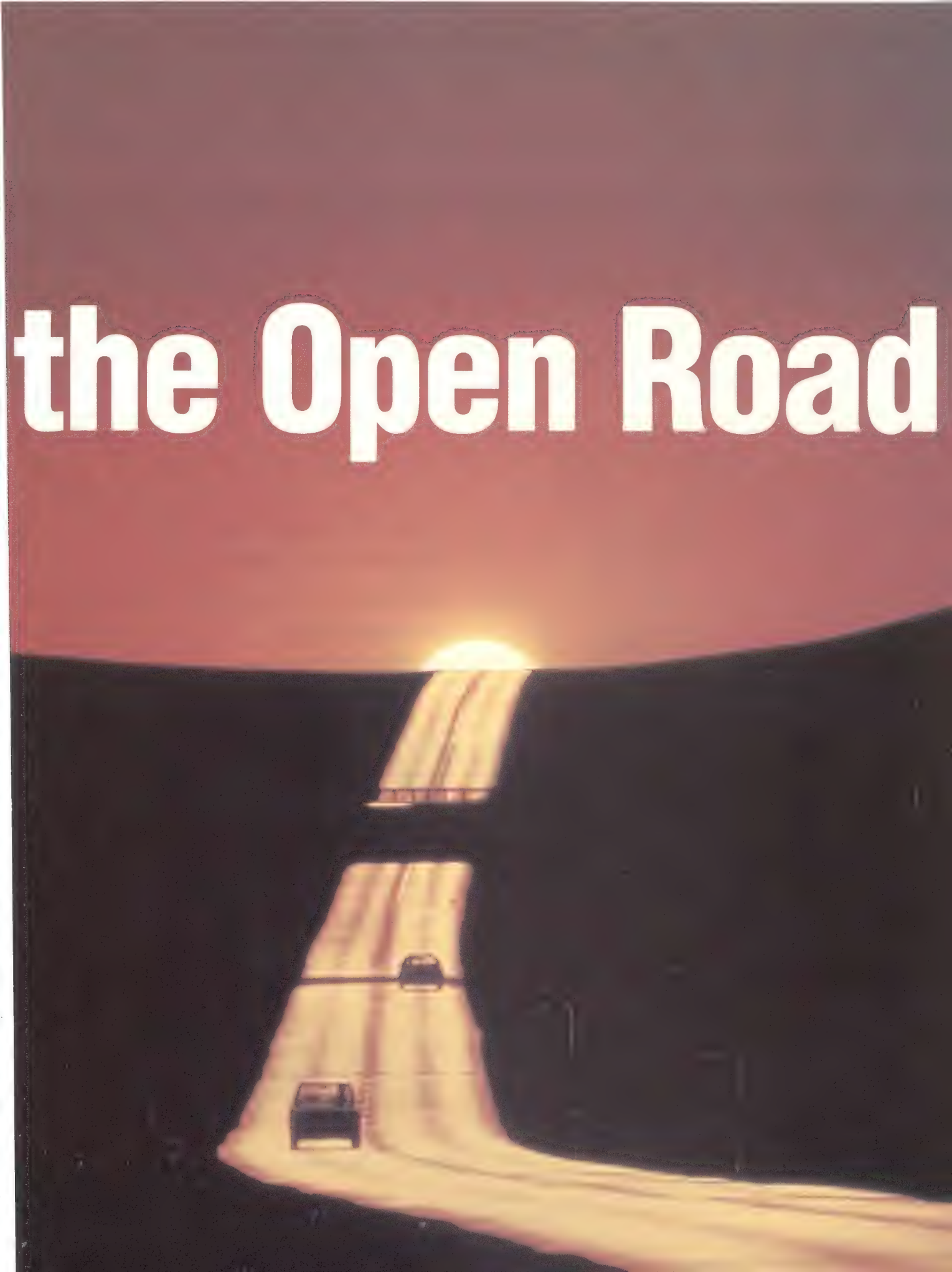
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In The Beginning, There Was X...

From Windowing Managers To Agent Tasks, UNIX Interface Evolution Has Come A Long Way In A Short Time— And There's No End In Sight

One difference between the graphical user interface (GUI) of your telephone and that of your computer is that you never think about your telephone — you just use it. And you certainly would never read an article about it. After all, what could the article tell you other than that in the last decade or so there's been a shift from rotary phones to push-button dialing?

Unfortunately, interface evolution hasn't been as simple in the workstation world. Of course, it could be argued that computers are inherently more complicated than telephones

By Michael J. Major

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and that, thanks to her monopoly status, Ma Bell never had to worry about protecting proprietary technology. But the fact remains that AT&T never had to advertise that its telephones were "user friendly" — everyone could see that they were.

Just the opposite has been the case with workstations. The recent trend toward "open systems," "commonality" and "user friendliness" has placed the emphasis on simple, intuitive interfaces that anyone can use. But, with workstation GUIs, as with other aspects of standards-based computing, the drive toward simplicity has brought new complications in its wake.

The Primordial GUI

WHEN VENDORS IN THE UNIX community began to construct GUIs, they encountered difficulties not found on PCs. "Multitasking, multiple processors, proprietary graphics hardware and time-shared operations greatly complicated the task," says Andrew Wolfe, in *The UNIX in the Office Guide to Open Systems* (April 1992), published by Patricia Seybold's Office Computing Group (Boston, MA) "Sun, Apollo and others successfully sold proprietary interfaces but it took the MIT X Consortium to establish a workable, standardizable framework for UNIX graphical user interfaces."

The X Consortium grew out of MIT's famous project Athena in the early 1980s, which was sponsored in large part by Digital Equipment Corp. and IBM. But GUI technology itself was pioneered in the mid '70s by researchers at Xerox's Palo Alto Research Center (PARC). Much of Xerox's original research ultimately became part of the graphical operating system of the Apple Macintosh (Mac OS). In fact, the GUI as we know it today really came of age only eight years ago with the introduction of the Mac in 1984.

Despite the superior commercial success of proprietary interfaces, like that of the Macintosh and its look-alike competitor, Microsoft Windows, Wolfe concludes that the X Consortium successfully implemented a true interface standard. "The X Window System created a unifying force for windowed GUIs in the interoperability-conscious UNIX community, and it has achieved a dominant position in the UNIX market that is unlikely to be challenged anytime soon."

Cathy Betz, business area manager of user development for the Open Software Foundation (OSF; Cambridge, MA), agrees. "X Windows is supported by about 35 of the top hardware and operating environment vendors," says Betz, pointing to the failure of other GUIs to achieve such wide-spread industry acceptance. "It's a landmark technology and a genuine standard. Microsoft Windows is not widely licensed by anyone except Microsoft, and Macintosh is still limited to the Macintosh."

But critics of X Windows charged that while the X Con-

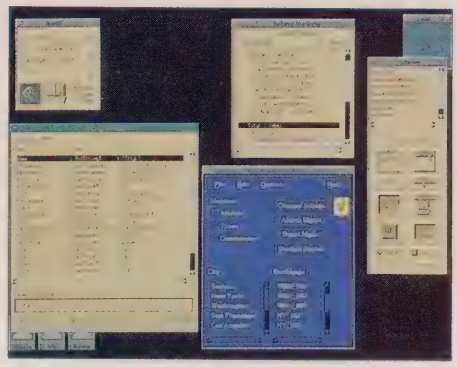
[Open Your Eyes To Gui Management]

The latest concept in interface development tools comes from down under. Australian-based ISV Open Software Associates has introduced a new product, called OpenUI, designed to manage the complexity of developing for competing GUIs.

According to Peter Westhorp, managing director of Open Software Associates, OpenUI is a user interface management system (UIMS), which allows developers to separate user interface design from application code. With a UIMS, programmers can make design changes to the user interface at any time without making modifications to the underlying application. It also makes the job of porting applications easier by translating interface design from one GUI format to another.

"A UIMS defines the user interface in a device-independent format, then drives the standard GUI toolsets to present the design on Motif, MS Windows, IBM Presentation Manager or Mac OS," says Westhorp. In other words, the application developer designs a single interface and the UIMS translates it into the appropriate format for the user interfaces the application will support.

Among the several advantages of a UIMS, Westhorp argues, is a reduction in development time. "The learning curve for true programming productivity is greatly reduced. You don't have to learn to develop for different GUIs; you can develop on one platform for delivery on a number of others." According to Westhorp, OpenUI also can drive an application on character-based terminals.



Objects in OpenUI can be picked from customized lists and placed on user interface under construction.

OpenUI 1.4 is available accross all HP 9000 computers on HP-UX 8.0, as well as on Sun SPARCstations, the IBM RS/6000, Digital Equipment Corp. DECstations, the Apple Macintosh, and PCs running either Microsoft Windows or OS/2 with Presentation Manager.

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sortium may have taken its initial cues from the Mac, it overlooked a crucial reason for that machine's success. While developing the Mac interface, Apple also devised a stringent set of application development guidelines. What's more, it provided tools to help developers adhere to these guidelines.

Third-party vendors complained bitterly about these strictures at first, but as the Mac gained popularity, people realized the advantages of a consistent interface across applications. Gradually, it became clear to X Windows' proponents that they, too, would need uniform development guidelines.

The runaway success of the Macintosh also highlighted other weaknesses of X Windows. For instance, X could effectively divide up the real estate of your screen, but it didn't provide much capability for manipulating the windows it created. Its graphics capabilities didn't go much beyond simple circles and rectangles. Users and developers quickly recognized the need to add basic functions such as a window manager and toolkit, as well as run-time routines that applications could use for their own scroll bars and display controls.

Trouble was, X Windows was the basis of products from more than one company.

Survival Of The Slickest

ENTER OPENLOOK, SUN MICROSYSTEMS' X Windows-based GUI, which was developed by AT&T and bequeathed to UNIX Systems Laboratories at the time of its spin off. Sun's plan was to establish its proprietary interface as a de facto standard for the industry — exactly the opposite of the X Consortium's original de jure strategy.

In reaction, the OSF, a research consortium lead by HP, Digital and IBM, issued a Request for Technology (RFT) to the industry in July 1988. The request was for a standard GUI based on the X Window System — a de jure standard interface that would counter OpenLook.

In January 1989, OSF announced its decision to incorporate technologies from HP (toolkit integration, window manager, 3-D appearance, Presentation Manager-style behavior); from Digital (toolkit and User Interface Language); and from Microsoft Corp. (Presentation Manager-style behavior. The resulting interface technology, OSF/Motif, was independently productized by each of the major vendors in the OSF — each vendor shipped its own version of the "standard." Motif's initial release in July 1989 started what has been called the "windows wars" between Sun (together with its allies in UNIX International) and the OSF.

At present, Motif appears to be winning the battle. The OSF technology is now supported by 72 hardware and software suppliers worldwide. Major corporations, such as American Airlines, Boeing and Shell Oil, to name a few, have standardized on Motif. Approximately 70 percent of government Requests for Proposals reference Motif. Motif has received virtually all the best user interface technology awards in the trade press. And except for Sun all major UNIX suppliers (and that includes IBM, Digital, HP, ICL and NEC) support Motif.

Raymond Anderson, chairman and founder, IXI Corp. (San Ramon, CA) says, in some ways, OpenLook is superior to Motif, but it hardly matters. "People are wasting their time producing OpenLook software, because people don't want that look." Anderson likens the situation to the battle between Betamax and VHS for VCRs a few years back. There were some good arguments for Betamax's superior technology, but VHS won the acceptance, and became the standard.

Missing Links

YET IN THE STRUGGLE to differentiate these two interfaces from each other, both the Motif and OpenLook camps overlooked a key insight of the original GUI research performed at Xerox PARC. They neglected to create the compelling metaphors so successfully implemented in Mac OS that enabled users to conceive of their tasks as commonplace actions, such as opening a folder or emptying the trash.

"This was the paradigm shift embodied in the Macintosh GUI," notes Wolfe, "an orientation to graphical objects, rather than to functions." To this day, these conventions — arguably the core attraction of a GUI — have been, for the most part, bypassed by Motif and OpenLook.

Motif has even compromised the original rationale for having a standard GUI: consistency across multiple hardware platforms. Though many consider Motif the de facto standard in today's workstation market, Wolfe notes that "if someone were to shop for a standard Motif workstation, he might conclude that there was no such thing." HP Apollo workstations come equipped with HP's Visual User Environment (HP VUE) and its workspace manager, IBM's RS/6000 delivers plain-vanilla command-line presentation and the Santa Cruz Operation's Open Desktop has its own unique look and feel.

"Menus, functionality and screen representations of common Motif ornaments can vary dramatically from platform to platform," says Wolfe. "Because the Motif Style Guide doesn't provide as much direction for when to use particular interface components, they may be used inconsistently."

Of course, Wolfe is quick to point out that there are significant drawbacks to OpenLook as well. Certain basic functions in OpenLook — such as icon handling and the selection of a window for keyboard input — badly need revision and debugging. Other faults include visually obtrusive user alerts and visual cues that are insufficient or unclear.

OpenLook users frequently complain about its counter-intuitive features. Marty Levine, technical editor with *HP Professional's* DP Labs and Testing Center, notes that users often are confused about which mouse button or combination

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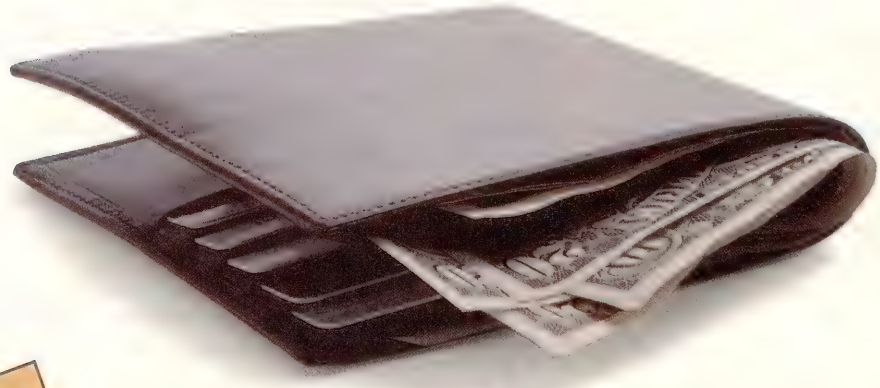

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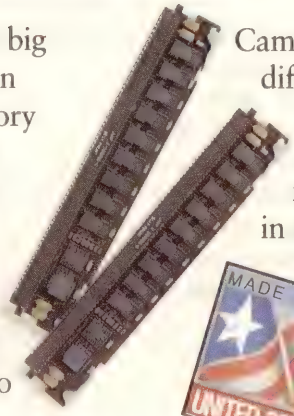

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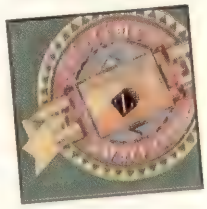

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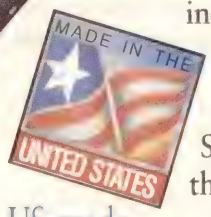

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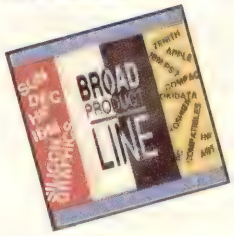

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Motif has even compromised the original rationale for having a standard GUI: consistency across multiple hardware platforms.

of mouse buttons to press. She also points out that OpenLook gives the user more subtle control over each window. "You can do work in a window without bringing it into the foreground, and you can display a window without scroll bars," says Levine. These are features, according to Sun, but to the naive user they can seem like bugs.

Natural Selection?

BUT THE EXPERTS WHO have declared Motif the ultimate GUI may be a shade premature. Some developers think the OSF technology may be something of a dinosaur — too big and ungainly to survive today's rapidly changing environment. Others suspect that a new windows war may be in the offing. This time, however, the conflict could be between the UNIX world with both Motif and OpenLook on one side, and the Microsoft world with Windows/NT— the Windows-based workstation operating system scheduled to debut this fall — on the other.

Microsoft, riding Windows' phenomenal success in the PC world, could present Motif and OpenLook with stiff competition. To say the least, the introduction of Windows/NT muddles Microsoft's relationship with the OSF. Microsoft and OSF continue to communicate about the possibility of implementing consistent interface styles for Windows and Motif, but to date the two interfaces remain worlds apart. According to Randy Raynor, vice president of marketing, Graphical Software Technology Inc. (Los Angeles, CA), "UNIX and DOS/Windows remain separate and distinct environments, totally different in terms of how GUIs are implemented."

And as far as workstation users and software developers are concerned, Motif is by no means the ultimate in GUI implementation. Milan Patel, technical support engineer, American Interface Computer Inc. (Austin, TX), says, "There's an aura surrounding Motif. But the way I look at it, Motif development tends to be very complex and inherently slow. Considerable planning is needed for programming efforts, and lots of code is needed even for simple instructions."

According to Wolfe, it is Motif's very simplicity that makes the interface so cumbersome. "Some Motif implementations are so bare-bones they can scarcely be called GUIs," says Wolfe. "Motif is sketchy when it comes to defining conventions for making use of the components." Also, Motif lacks pop-up menus and contains many confusing or ambiguous design elements. Greater definition of these user environment elements might have made Motif less flexible but more efficient.

PC users, with whom Windows 3.1 is by far the most popular user interface, simply aren't interested in Motif. The number and quality of productivity applications running under X lags severely behind those available in the PC and Mac environments. And although PC-based X servers now allow PC users the option of accessing X Windows applications, most users haven't felt a need to. The range of software choices in the DOS/Windows world is so vast that there is little reason to look elsewhere. And PC software prices — thanks to volume sales — remain significantly cheaper than those of comparable workstation applications.

Windows/NT, however, which Microsoft already has slated for some workstation platforms (Digital has announced it will support NT on its long-awaited Alpha RISC) could neutralize PC/workstation differences to some extent. A common operating system and user interface across workstations and PCs would enable developers to keep software prices down. And

Dave Mallery, in the January 1991 issue of HP Professional, *writes: Until recently, Hewlett-Packard presided over a divided market — commercial systems on one side, technical systems on the other. This schism was reflected right down to the company's organization. The Commercial Systems Division developed and maintained the HP 3000 and MPE; the General Systems Division and the workstation group shared responsibility for the HP 9000 and HP-UX. Cooperation between the divisions was limited, and it sometimes seemed that one group didn't have the faintest idea what the other was trying to do.*

In the past year, a lot has changed. The company has successfully leveraged its PA-RISC architecture across the HP 3000 and HP 9000 lines, giving HP a degree of architectural consistency across platforms that no other vendor can offer. The HP 9000 and HP-UX have finally taken hold in commercial markets, and the HP 3000 has become the undisputed leader in minibased OLTP. HP users in the field are exploring opportunities to link these historically separate systems.

More important, the two lines now are united under a single banner. I'm referring, of course to NewWave Computing. With its NewWave Computing strategy, HP at long last has put forth a way that its commercial and technical systems, as well as the Vectras and newly added HP Apollo systems, can work together to solve business problems.

with software availability determined by the operating system rather than the hardware platform, users would no longer need to think in terms of separate PC and workstation markets.

Wide-spread adoption of NT could also make the Motif/OpenLook dispute a moot point. The operating system, in the case of NT, would now contain its own GUI — Windows. In fact, if IBM is willing to spend the money, a more likely multiplatform rival for Windows/NT could be its long-lost brother, OS/2. Of course, as with much else in the world of standard GUIs, all this remains to be seen.

The Next Generation

IN ONE SENSE, THE LOSS of hope for universal interface standards is alleviated by improvements in the various interface toolkits. These utilities give developers greater flexibility in porting GUIs across different hardware platforms. For instance, Mark Krieger, president of UniPress Software Inc. (Edison, NJ) reports that his company provides Motif for Sun users and OpenLook for HP users that want the same.

But complexities — and obstacles to standards — continue to crop up. Just as X Windows, which was once considered a solution soon became a stumbling block, Motif and OpenLook are now showing their limitations. Graphical Software Technology's Raynor says that his company is one of several third parties putting new layers on top of Motif, including bar graphs, screen painters, spreadsheets, and other more sophisticated functions.

After portability, the next wave of user interface developments is likely to be the increasing automation of basic office tasks. Scripting and agent task functions similar to those furnished by HP NewWave Desktop will be integrated directly into the user interface. Users will be able to step through a particular operation, such as preparing a weekly report or extracting information from a database in order to update a spreadsheet, then record the procedure for future use. Routine tasks will be scheduled and performed automatically without further user input. Look for these kinds of capabilities in Windows/NT.

Regardless of the trend toward standards and the demand for open systems, users should expect GUI evolution to continue at its present rapid pace. In fact, at the rate things are changing, it may never be as simple to use your computer as it is to pick up the phone. — *Michael J. Major is a freelance writer based in Port Townsend, WA.*

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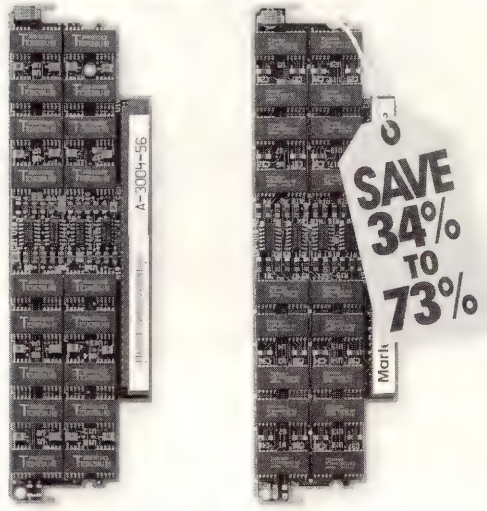

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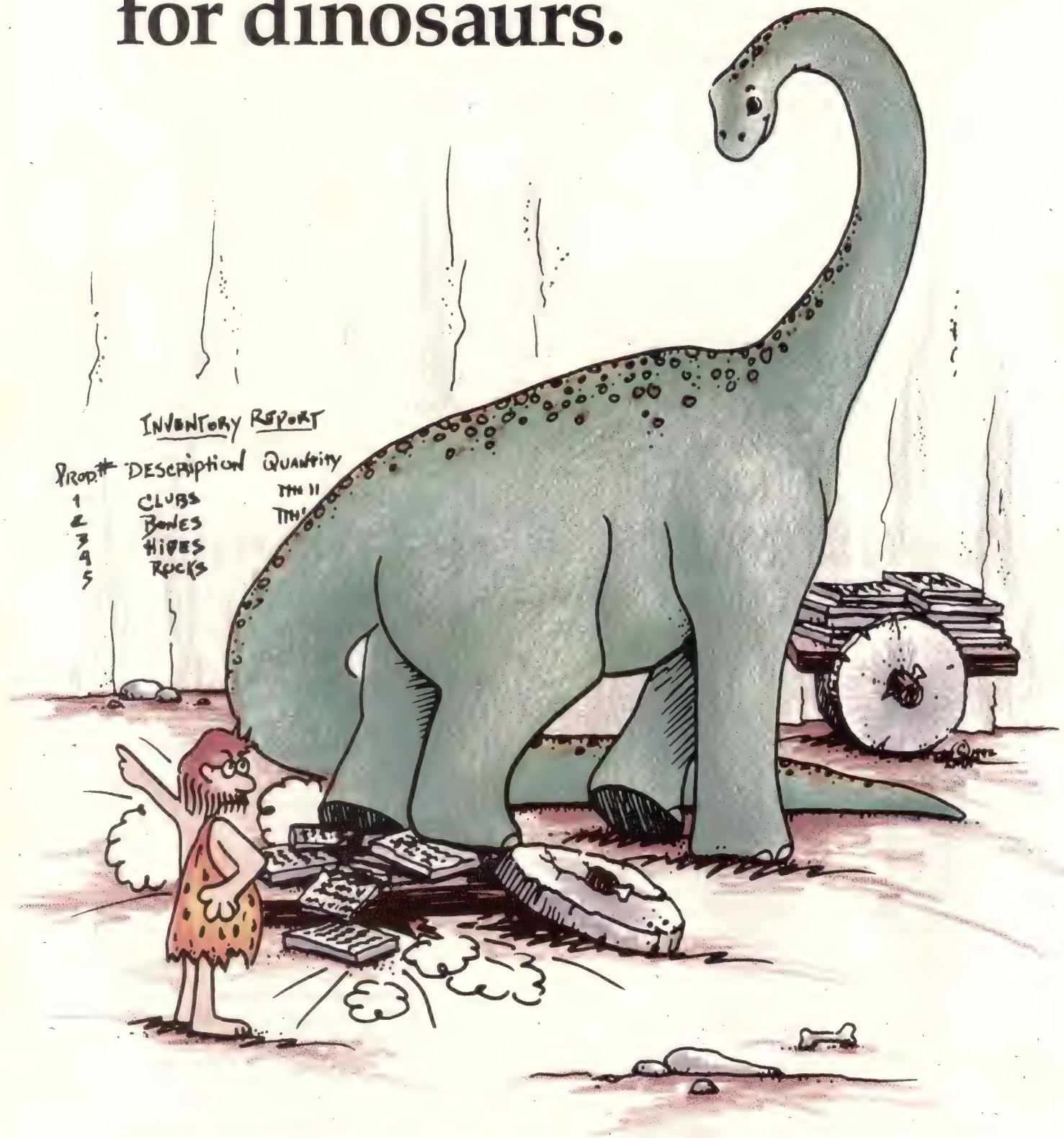

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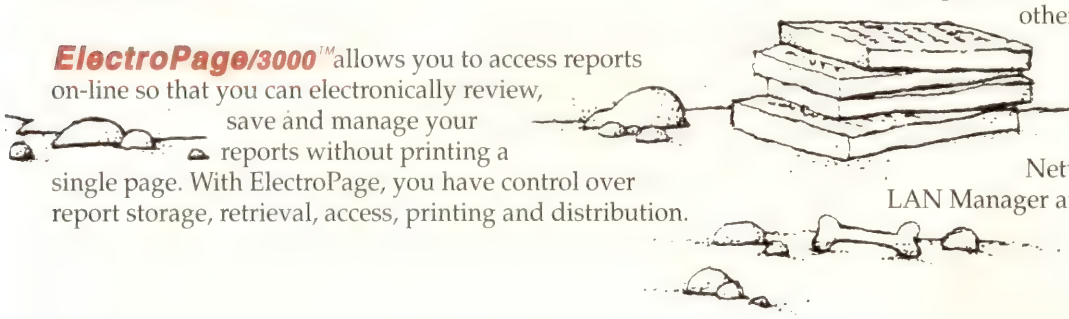

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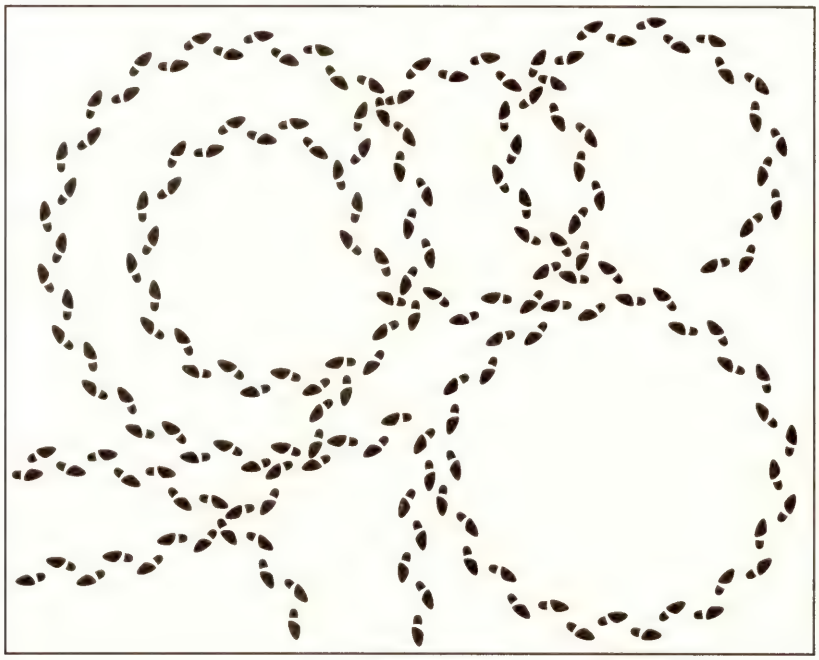
GORDON MCLACHLAN



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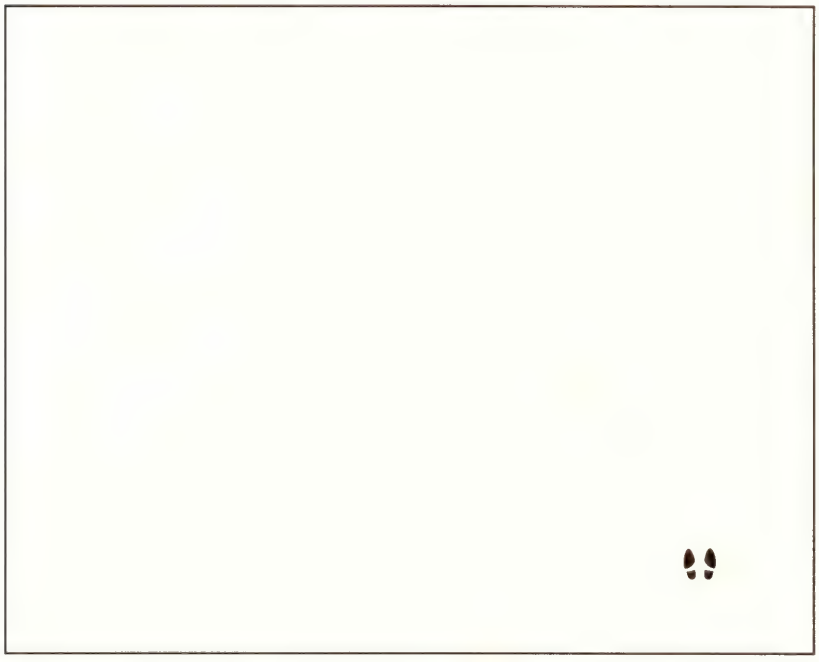

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CIRCLE 118 ON READER CARD

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"They liked their NetWare 2.1, but they couldn't upgrade the server or the software because it wasn't "standard" enough for you pointy-headed systems planners!"

on the tangle of wires hanging from the back of the machine and was laid out cold. (I always hate when that happens to a staff person. Sometimes I think they do it just for the time off.)

Boldly striding to the miscreant machine, I insulted it before reaching down to pull the plug. The last thing I remember was The Doctor, our support manager, yelling, "Dammit Jim, you didn't log the freaking thing off the network ...."

When I came to, I was lying in the back of Scotty's pickup. They had apparently dragged me out there and Doc was sponging me off with a beer-soaked rag—beer being the only cold liquid to be found in a network engineer's vehicle.

Mr. Pock, our network planner, was furiously scribbling in his notebook. Looking at me with one raised eyebrow, he quipped "Ah, Captain. It's good to have you back." A born comedian.

"According to my calculations," he continued, "the server has been 72.34 percent destroyed. We should be able to salvage the keyboard, monitor and, possibly, a disk drive."

"How long before we can get a new server online, Scotty?" I asked. The network engineer warily eyed the smoking hulk of what once was a 286 AT clone and replied sharply: "She's a goner, Captain. There's nothin' I can do for this piece o' flotsam. All that's left is to shovel 'er into a bag."

"Can we replace it?" I asked.

Scotty frowned thoughtfully before replying. "No, I'm afraid I don't have anythin' that old in storage. I could rig a replacement by linkin' this department to one o' my under-utilized PA-RISC units over TCP/IP. It'll be a rough fit, but it should hold til we can arrange somethin' a wee bit more permanent."

Most Illogical

POCK RAISED HIS EYEBROW at Scotty and swung his gaze to the Doctor. "This is most illogical, Doctor. With all the options at their disposal, why did this department continue to use an obsolete networking tech-nology? Didn't your support staff know the extent of this sit-uation?"

"Dammit, you ivory tower-climbing baboon!" ranted Doc. "It's your damn bureaucratic standards and purchasing restrictions that forced them into this situation. They had their NetWare 2.1 and liked it, but they couldn't upgrade the server or the software because it wasn't "standard" enough for you pointy-headed systems planners! Without purchasing authority, they were doomed."

I marvelled at Pock's restraint as he responded coolly: "Doctor, you know very well the need for standards. Without firm standards, we would have less than a 40.56 percent chance of successfully establishing an enterprise network."

"While you two argue," I said, "Mr. Scott will link the beancounters systems to our TCP/IP network. Can you do it, Scotty?"

"Aye, aye, Captain. I can have her up and runnin' by the end of the week!"

"That won't be good enough," I told Mr. Scott. "The month-end is only three days away. You'll have to have them linked before then."

Scotty was a study in determination as he steeled his gaze and wheeled about. "Aye, aye, sir. My crew and I'll give 'er everythin' we've got."

Standard Scrutiny

WALKING BACK TO MY cubicle, I was curiously troubled. I knew that we were doing the right thing by connecting the beancounters to the enterprise network, but I was still uneasy about it. We hadn't planned on introducing them to the new technology until the beginning of next year, but this situation was forcing our hand. How would the beancounter society adjust? Would rapid change throw them into turmoil? Suddenly I realized I was flirting dangerously with a violation of the Prime Directive.

I sought Pock's reassurance. "Are we doing the right thing, Pock? I don't know if the beanies are ready for this."

"Captain, it was inevitable that this moment would come. The accountants' technology had progressed to the point where they were a potential danger to themselves and others. Although it had entered a prolonged period of stasis, their NetWare would eventually have metasticized to the point where it would be impossible to control. It is our duty to guide them into them into the future with a firm, but gentle, hand."

"Poppycock!" the Doctor exclaimed, "Change may be inevitable, but who's to say it's our role to play God? How do we know how things might have turned out without our interference? It's not our right to force change on these

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CIRCLE 173 ON READER CARD

"If we have to use UNIX servers, why not buy NetWare? It's a damn sight better than forcing NFS down the users' throats!"

beancounters as long as they're happy with the way things are. If our standards are so great, they'll come to us for help when they're ready. In the meantime, we should leave them alone."

"Doctor," responded Pock, "there is no other alternative. Our corporate standards clearly state that we are to follow Open Software Foundation Distributed Computing Environment specifications. These mandate that we will use UNIX servers and the Network File System or LAN Manager/X for PC integration."

I nodded weakly in support of Pock. Without standards, we would be little more than troglodytes, hitting dinner over the head with whatever implement was close at hand. Still, I felt uneasy. Even if what we were doing was proper, I wanted someone else to make the decision.

Just when I thought things were settled, Mr. Scott arrived with more bad news.

Countering The Mac Attack

"Captain, it's even worse than I thought! There's half-a-dozen Apple Macintoshes in the marketing department that need to be linked into the network. I don't know how they got in here, but they're there, big as life!"

This roused The Doctor. "Jim, we'll have a rebellion on our hands if we don't get those Macs connected!"

I looked to Pock for direction, he seemed as perplexed as I was.

I instructed O'Hara, my administrative assistant, to patch us through to the Hewlett-Packard sales office. We needed to get the official position from HP Network Command.

Our crisis deepened when Pock relayed what he had learned from open systems specialists at HP high command. "According to the HP timetable, Macintosh support for LAN Manager for UNIX Systems won't be available for another year. We need to wait for version 2.1, which won't be releasing until the middle of 1993. The only logical alternatives are to wait, implement LAN Server on OS/2 systems, or provide Ethernet hardware and NFS client software for all of the Macintoshes."

"What's the best choice?" I asked.

Mr. Pock had an answer ready. "If we wish to stay within our standards parameters, we have no choice but to use Ethernet and NFS on both our Mac and PC clients. We may not let ourselves succumb to the temptation of using PC-based servers. The probability of success with PC servers is ...."

The Doctor interrupted Pock angrily. "If we have to use UNIX servers, why not buy NetWare? It's a damn sight better than forcing NFS down the users' throats!"

Pock, unperturbed, gave The Doctor this prognosis: "The only version of NetWare that we can get for our HP-UX systems is Portable NetWare. It's slow and doesn't provide all features of "native" NetWare. Only basic print and file serving capabilities, inadequate for implementing a client-server strategy, are provided.

"HP has announced an agreement with Novell to provide native NetWare on PA-RISC systems, but even if native NetWare — with its support for NetWare Loable Modules — were available, it would not be a logical choice. As you undoubtedly are aware, Doctor, NLMs are badly kludged and, perhaps, as dangerous as Mr. Scott's makeshift repairs."

Scott was becoming increasingly agitated. "I'm with the Doctor on this one, Mr. Pock. We haven't even finished evaluating the hardware and software for Macintosh NFS clients. The balance between the Mac OS and AppleTalk is very delicate. We cannot afford to take such a chance with the network. One wrong step and we'll take down the whole system."

It was clear that my staff expected me to make a decision, but I couldn't. We had to have standards, but the standards didn't cover this situation. Something had to be done, but what? Unable to come to grips with a solution, I did the next best thing and passed out melodramatically.

Equal But Opposite Reactions

WHEN I CAME TO AGAIN, I found the Doctor fanning me with a sheaf of purchase order forms. Suddenly, I thought I knew just what to do. Grabbing the sheaf with both hands, I wrestled it from Doc's grasp and backed into my cube, snarling unintelligibly.

Firing down cold coffee, I grabbed a pen and started scribbling furiously. 486 PC clones. NetWare 3.11 with a server-based TCP/IP router. Mac client software and Ethernet and AppleTalk interfaces. This would take care of things, and fast.

To hell with the standards! If we wanted this network to

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CIRCLE 245 ON READER CARD

fly we needed action, not strategies! Scooping up the paperwork, I strode determinedly to the purchasing department. This problem was solved. That is, it would have been had I made it all the way to purchasing.

Waking up on the floor again, this time I saw an animated Pock waving a the sheaf of POs in my face. Deja vu all over again. It wasn't until the third time through the drill that I realized what he was saying.

" ... and if you persist in trying to make unauthorized purchases, Captain, regulations state that it is my duty to rescind your signature authority and take over the command of network purchases."

"Like hell you will, you bureaucratic puffin!" cried The Doctor. "Jim's the project leader, and as far as I'm concerned, what he says, goes. I won't stand by and let you lead a mutiny!"

"Mutiny is not my intention, Doctor." said Pock. "Regulations clearly call for the second-in-command to take over purchasing if the project leader is unable or unwilling to execute his or her responsibility in good faith."

Confused, I reached for the paperwork. Seeing my signature on the POs hit me like the cold wind on Penal Colony XVI. Had I signed for this? It went against standards, regulations and everything I believed in. But at the same time, I knew that I didn't have any better ideas right now. Befuddled, I went back to my cubicle to do some more research.

The more I looked at the problem, the more it looked like Pock was right. The computer records of the battles between Microsoft and IBM in the OS/2 wars showed how risky it was to rely on that platform. It wasn't clear if the Microsoft New Technology armada would eventually triumph over IBM and its OS/2 fleet or not, and LAN Manager for UNIX systems reinforcements would be too late to help us.

Then again, The Doctor had a point, too. The beancounters were happy before we got here. If we just upgraded their NetWare installation, they might still be happy for a time. But would that just cause us more grief over time? Could we get any more time? Mr. Scott could put something together if we just had more time. More time... More time...

One Twisted Pair

THIS TIME I WOKE up strapped to my office chair. A thin coaxial cable was taped to my right forearm and a twisted-pair 10Base-T cable to my left. Fortunately, I actually felt good for a change, but I was surprised to see that it was almost quitting time. The whole day had gone by, and was now just a blur.

As the memories of the day's events flooded back, I was totally confused. "What happened?"

The Doctor was effusive. "Thank God, it worked, Jim. Welcome back!"

As usual, Pock was first with an explanation. "Your confused mental state was caused by your simultaneously coming into contact with the NetWare server Arcnet cable and an Ethernet TCP/IP twisted-pair when you tried to unplug the server. You short-circuited the networks with your body, and your synapses were scrambled, resulting in your developing a split personality.

"One personality, the Standard Jim, was determined to do everything by the book and wasn't able to comprehend using a quick-fix to solve the server problem. The other personality, Hacker Jim, would do anything to make the problem go away quickly."

"I see," I said. "And apparently, neither of these personalities was capable of effectively dealing with the situation on its own. It is obviously the combination of the qualities of the Standard Jim and the Hacker Jim that give me my rare insight into problems of all shapes and sizes. Well, I'm glad to be whole again, so that I can make a command decision. Status report, Mr. Scott?"

"No disrespect intended, sir, but while you were screwin' around with your purchase orders and flopping around on the floor, my crew and I bought a clone box from Brand X Warehouse for less than $500. We swapped in the old disk drive and she's hummin' like a Saurian Bongo Bird."

"Pock?"

"Technically speaking, sir, there was no violation of policy. Purchases of less than $500 do not need formal approval. A strong case also can be made that we were merely following the Prime Directive: To wit, 'If it ain't broke, don't fix it.'"

That's what I like to see. A quick, clean wrap-up. At least Standard Jim and Hacker Jim agree on one thing: We'll solve no problem before its time. If we can just ride this out for another six months, we might have a shot at a real solution.

Would you like to continue to see articles on this topic?
Circle on reader card
yes 340 no339

HP Professional 5th Anniversary

Bill Sharp, in the July 1991 issue of HP Professional, *writes: It's no secret that the HP 1000 turns 25 this year. That makes it five years older than the DEC PDP-11 and certainly one of the oldest architectures anywhere. HP recently fired up one of its first HP 1000 models, the 2116B, alongside a current high-end A900, both using the same software. That two computer models 25 years apart can use the same software is as impressive as it is unusual. The importance of real-time computing has reached a broader market. Real time is now* ***real big time****.*

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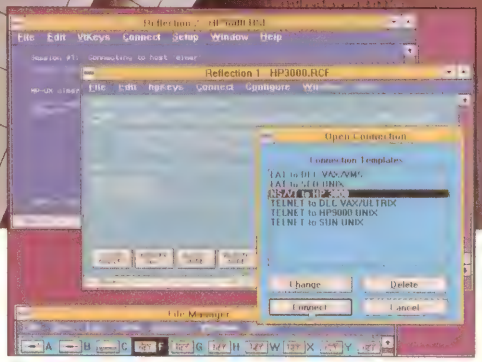

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Work In Progress™

Progress Software's Fast Track Puts Your Application Development Effort Into High Gear

By David Miller

The need for thorough, but fast application development has changed the way we think about "programming." The introduction of CASE tools, 4GLs, prototypers and application generators has introduced greater flexibility into the design and programming process.

One company developing such prototyping and development tools is Progress Software Corp. Progress recently sent us its Progress Application Development System (PADS), which includes the well-known Progress RDBMS and 4GL along with the Fast Track application building tool.

There's some debate over the impact of rapid prototyping tools on the software development process. Does prototyping enhance the design and development process or does it simply allow for the faster development of poor quality applications?

Suffice it to say that no prototyping tool should be a substitute for proper planning and design. If you've done all of the requisite design work (using DFDs, E-R diagrams and other such tools) rapid prototypers and application generators like Fast Track will really enhance application development. If done properly, a

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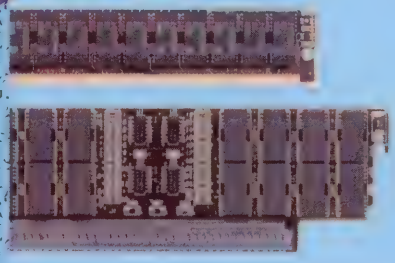

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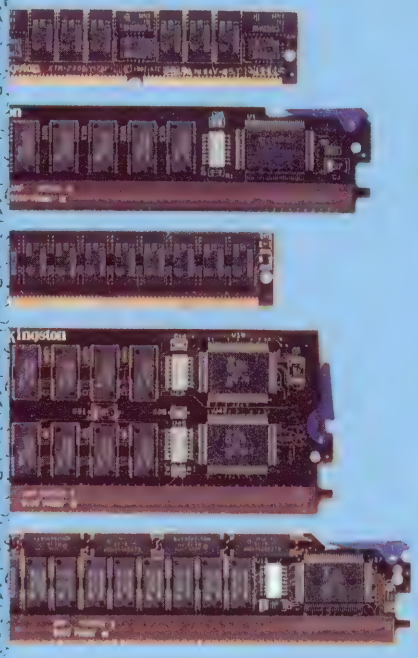

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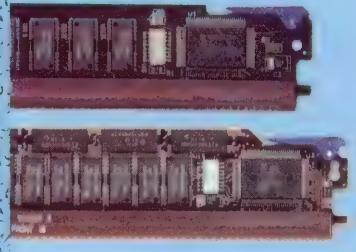

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CIRCLE 457 ON READER CARD

FIGURE 1

```
PROGRESS FAST TRACK

1. Menu Editor
2. Screen Painter
3. Report Writer
4. QBF Generator
5. Maintenance
6. Settings
7. PROGRESS Help
8. Use Operating System
9. Leave FAST TRACK

You are at the main menu of the PROGRESS FAST TRACK.
Make a selection in the menu by using the cursor keys, by entering the
number of a choice, or by entering the first few letters of the choice.
Press F2 for help. To use the PROGRESS editor, press F4.
```

Much of an application can be built using Fast Track's primary components, shown here on the main menu.

prototyped application can be rolled over into production once users and management are happy with it.

With that caveat in mind, let's take a look at what Progress can do.

Although you can roll your own applications using just the Progress 4GL and RDBMS, Fast Track provides the interface to Progress RDBMS and Progress 4GL to help you get your applications up and running quickly. Programmers of all experience levels can use Fast Track to prototype and develop most, if not all, of a common application. Special procedures needed to fill in any gaps can be written in Progress 4GL and incorporated into a Fast Track application.

Using Fast Track on our HP 9000 Model 834 running HP-UX 8.0, we developed a simple student grading system.

We really started from scratch, creating a small database, setting up the appropriate tables and indices. If you currently use Progress RDBMS, you can quickly convert a Progress database into a Fast Track database. When you're starting from scratch, however, you first issue the following command to create a new database:

```
proddb  /Track installation directory>/
emptyft
```

This command creates the structures needed to define the new database. You then issue the command:

```
proft <new_database_name>
```

to start using the new database.

What's On The Menu?

The initial menu shown in *Figure 1* displays Fast Track's various components. However, defining a new database schema requires access to the Progress RDBMS data dictionary. This can be done directly from Fast Track. After the database schema is defined, you return to Fast Track to create the Menus, Screens, Reports and Query By Form (QBF) procedures that comprise your application.

Fast Track is menu driven, with a number of special keystrokes you need to remember. However, the menu system and special keystrokes are consistent across each Fast Track module, so there are no nasty surprises to deal with as you pass from module to module.

If you're prototyping an application, you might want to flesh out the menu structure first, then generate some data entry and query screens, finishing up with a basic report. You can then use Fast Track to continually refine your ap-

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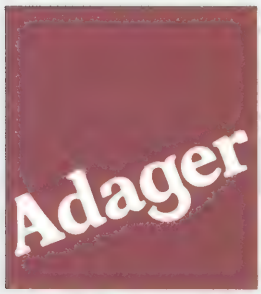
b) If you have an Adager license on a Classic machine and you get an **additional computer that happens to be an XL machine,** you simply pay the Adager fee for the additional machine.



The Adapter/Manager for IMAGE/3000 Databases

The Adapter/Manager for TurboIMAGE Databases

The Adapter/Manager for TurboIMAGE/XL Databases

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plication until you're happy with it.

Creating menus with Fast Track is simple. After invoking the Menu Editor, you simply start typing the menu choices your application needs. Fast Track automatically numbers the entries, and can provide for pattern matching to allow you to choose from a menu by entering the first few unique characters of the menu option.

Also defineable are procedures that run before and after running the menu you're creating, as well as actions available upon choosing a menu option. It doesn't matter if the target options for your menu choices exist, you can still create and test the menu and attach the other pieces as you go. You can add or delete menu options until you're satisfied with the results.

The small menu for DP Labs University is shown in *Figure 2*. Next to the menu is the tree listing of the menu hierarchy, which you can generate and print from the Menu Editor.

Screen Star

Fast Track's Screen Painter provides a variety of options that let you design input screens for your applications. With it, you can modify a screen's appearance and behavior including form width and length, field label location, the form's location on the screen and the color of text and background. It's possible to group multiple records with the same form. Fast Track will then give you scrolling ability to peruse each record displayed.

The menu system and special keystrokes are consistent across each Fast Track module, so there are no nasty surprises.

After telling Fast Track what tables held the fields we wanted on our Student Grade Input/Query form, a simple Insert command positioned each field on the editing screen. Fields and field labels can be relocated and deleted. Text can be added to the form to help those who are going to be using the screen in production.

Field attributes that were defined when the database's tables were set up can be overridden in the Screen Painter. For example, Progress assigns an update precedence to each field. If you reorder the fields in the screen painter, you'll need to override the database's precedence setting to allow you to fill in your screen data in the order in which it appears on the form, not the order dictated by the database settings.

You also will probably need to add (or override) field validation criteria to ensure that valid data is entered by those using your form. The typical mathematical and logical operators and symbols are provided to let you build expressions to perform range checking and other validation operations. Functions are also provided to let you check for related records in other tables and to check for the existence of an input item against a list of valid choices. An example of a field specification box is displayed in *Figure 3*.

Text messages can be included to provide field-level help to the end user. Additionally, you can include a message that is displayed if invalid data is entered into the field.

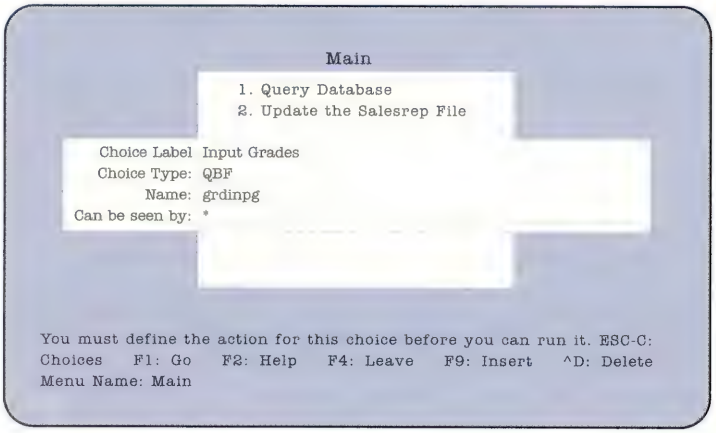
Quick Updates

After you're happy with the screen, you can generate a form file that can be included in Progress 4GL procedures. An option we used was to generate a Query By Form (QBF) procedure, which allowed us to perform file maintenance such as record addition, deletion and modification as well as letting us perform queries, joins and seeks against the live database. We used the QBF generation option frequently to add data to the tables we created in our application.

QBFs can also be created standalone with Fast Track's QBF Generator. The advantages to using the QBF Generator are that you can create several QBFs in one session and relate them with a menu procedure. Only one QBF at a time can be generated via the Screen Painter.

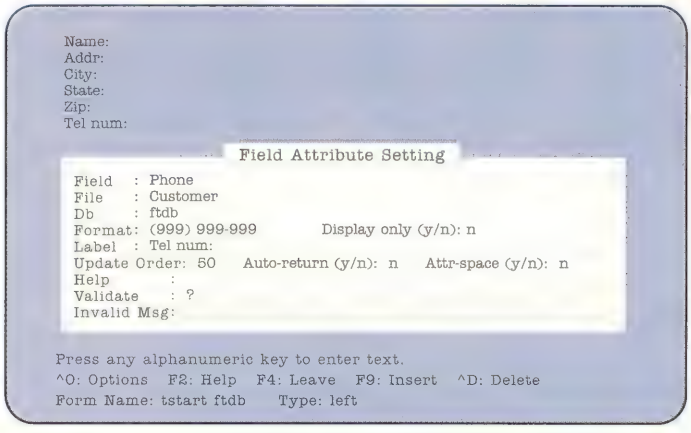
As with the Screen Painter, you can pick the tables you want included in the QBF. However, you don't have the editing capabilities of the Screen Painter. That is, you can't move fields around or add anything fancy to the QBF form.

FIGURE 2



The menu built for our sample application and the description of the menu hierarchy.

FIGURE 3



Field attribute criteria can be specified in the Screen Painter, overriding attributes set in the fields data dictionary entry.

Once happy with the QBF, you can generate a procedure file that can be run immediately after it's generated, from the Progress database editor, from a menu option that you've created earlier, or from the QBF Generator menu.

Many QBF run options are available. As noted above, QBFs can be used to view, add, delete, print and update records. A query option lets you enter expressions to view a subset of the records in the table(s) affected by the QBF. The JOIN option lets you glue related tables together.

Progress Reports

Fast Track's Report Writer module is extensive, yet flexible and easy to use. It was simple to specify to the Report Writer what tables and fields should be included in the report. Field order, labels and headings can be modified to suit.

While the procedures I generated created simple listings, you don't have to settle for a plain vanilla report. Fast Track reports can be modified to set up control break groups. You can add qualification criteria to cause Fast Track to report on subsets of data in your database. A hierarchy of report sections can be set up to show the relationship between files in a multi-file report. Calculations can be done on the fly with temporary variables and aggregate functions such as AVERAGE, COUNT, TOTAL, MAXIMUM and MINIMUM.

As a former 3GL coder drilled with structured programming techniques and the "get the design perfect before your pencil touches the coding form" philosophy, we found the recursive prototyping and application generating abilities of this product truly refreshing. Fast Track lets you satisfy the urge to get started with something productive while the design process is still in motion. ■

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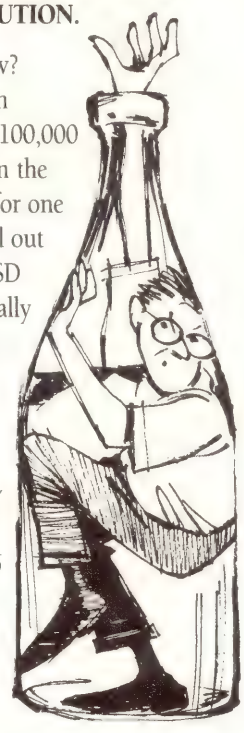

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The Next WAVE

HP NewWave Desktop 4.0: More Than Mere Window Dressing, HP's Splashy Desktop Manager Regains Momentum

Hewlett-Packard introduced version 4.0 of NewWave last April in conjunction with the introduction of Windows 3.1. With version 4.0, HP wanted to differentiate its NewWave releases from the underlying Windows platform, but it also began a concerted effort to represent NewWave as a unique and stable product on its own merits.

The first thing you'll notice when you break open NewWave 4.0 is a new installation process. The software is shipped on only three disks, and the process runs much more smoothly and quickly than previous versions of NewWave.

One reason the installation process is greatly simplified is that, like Windows 3.1, NewWave 4.0 no longer supports the Intel 808X processor and can no longer be run in Real Mode. If you struggled through earlier installations trying to determine whether you were running in large frame mode or whether you had enough "below the line" memory, you'll be glad you upgraded to version 4.0.

At the end of the new installation process, you can scan your disk for applications. Most of these can be bridged automatically, with NewWave making the decision whether a particular application should be encapsulated as an object or as a tool. No longer do you need to go through the Bridge Builder to install virtually every application into NewWave. If you want to change the way NewWave installs an application,

DP LABS

By Miles B. Kehoe

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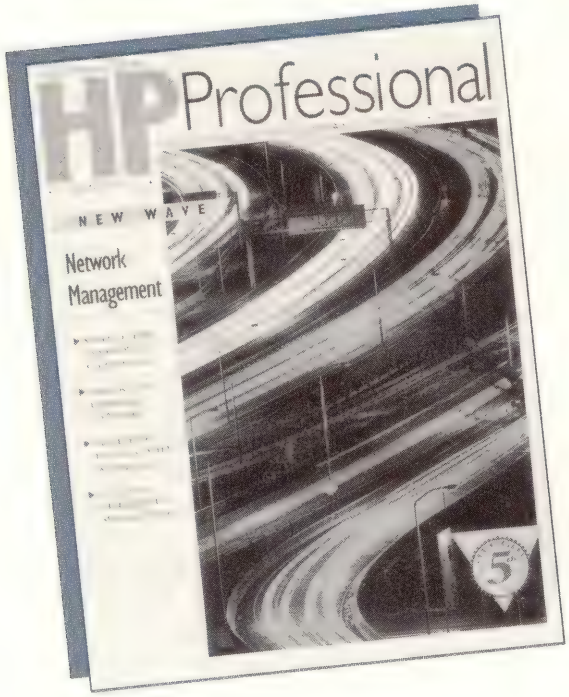

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[NewWave Rolls Into The Future]

If NewWave 4.0 provided technical improvements, upcoming versions (the next upgrade is scheduled for release this fall) are expected to improve the way users interact with the application.

Look for a new installation with an "automatic mode." This will let most users install NewWave with few decisions necessary. And, the automatic attaching of existing documents will be done within existing directories. You should be able to create folders corresponding to directories, and attach documents to objects within these folders. You also will have ways to modify more attributes of encapsulated applications without using the Bridge Builder.

Better integration between NewWave and non-NewWave applications is also on the way. An expected feature most NewWave users will appreciate is support of Multiple Document Interface windows. For example, if you're using a Word for Windows document and click on a second Word object, the second document opens as an MDI window in the application.

In the future, NewWave will monitor activity in the FILE menu of any Windows applications you're running. When you rename a file using Save As, NewWave will create an object associated with that document. System administrators will appreciate the ability to install SER files by dragging them into NewWave from the File Manager.

Also, expect improvements to the user interface. Perhaps the most exciting of these is the "Create A New" tool, which is expected to provide a window showing installed object types. By leaving this tool open, you can double-click on the icon to create a new object. Picture the objects as pads of blank documents: you simply "tear off" a sheet when you want to work.

Another upcoming feature will let you maintain multiple printers as icons within the standard printer icon. If you have multiple printers, you can simply leave the printer document open and icons for all printers are visible. Finally, the next version should display long object titles on two lines. This will make housekeeping easier when you align your objects, since long titles are less likely to obstruct other titles.

you can use a menu selection to change simple application attributes, or you can use the Bridge Builder.

Earlier versions of NewWave allowed you to specify "start-up" keystroke macros for non-NewWave applications, but starting with version 4.0 you also can define a "print" macro. This lets you customize nearly any application so that you can print objects simply by dropping them on the printer tool.

While the technical details are not overwhelming, the added capability makes all applications look more integrated with NewWave. NewWave 4.0 also includes a much-improved "drag and drop" capability. For example, you can actually install new applications into NewWave by simply dragging the executable file from the File Manager to the NewWave Office.

You can attach DOS files to objects, and detach the contents of objects to DOS files, using a menu selection rather than the rather obscure "DOSFileAttach" utility in earlier versions of NewWave.

Desktop Navigation

NewWave Version 4.0 now features a NewWave Control Panel tool. This lets users customize their desktop easily, without the need to edit WIN.INI or other control files. There are a number of new menu items in version 4.0 that give you more flexibility. For example, there is a Find Object menu item that lets you select and open objects based on the object type and title. The desktop also allows long file names, up to 32 characters, even for DOS applications. This

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alone is enough to make NewWave the environment of choice for many users.

Another nice feature of the new desktop is the ability to minimize NewWave objects as you could always do with Windows documents and programs. You can open a folder in NewWave, then minimize it as an icon on your desktop for quick access.

In version 4.0, HP removed several small applications. You no longer have NewWave Write or the Image Viewer. However, Text Notes do remain. The loss of these applications isn't great by itself, but many people who want to evaluate NewWave are looking for applications that show off the product's power. Without these small applications, many prospective users will have to evaluate NewWave based on how well other applications are integrated.

Version 4.0 also features a greatly improved on-line Help system, including complete ATL documentation. In some places on-line help is as useful as paper documentation, but I do sometimes wish the printed documentation was a bit more complete, or that there was an easy way to print a number of pages from the on-line Help without having to manually select each page.

Agents Of Change

Even with all its improvements in the user interface, I'd say the real strengths of NewWave 4.0 are in the realm of the Agent Task Language or ATL. HP made a number of significant additions to the ATL, including the ability to interact with other applications and Windows from an ATL program.

The new ATL includes the ability to directly use DDE links to and from other applications. It also supports the ability to make calls to any DLL, including to those that make up Windows. Using these new capabilities, you can produce ATL programs which call on all the power of Windows. The Agent also supports a variety of new data types like arrays and pointers so you can build the structures DLLs often require.

HP has also included an Interface Object, the beginnings of a forms package, in the ATL itself. You can create forms with push buttons, text fields, icons and drop-down menus without ever leaving the Agent. Forms can call tasks, and tasks can call and display forms. It isn't as powerful as character-based forms applications in that it lacks data validation or nice features like line drawing sets, but it is a great first step.

In NewWave 4.0, tasks can be assigned to menu items either for a particular object, or for all objects of a given class. You can also write tasks which call other tasks, or nest concurrent tasks within an ATL program. ■

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MANAGING YOUR HP 3000

John P. Burke

With Software Upgrade Prices Soaring, It Pays To Read The Fine Print

Whose Software Is It?

Perhaps you've been unlucky enough to have lived through a "migration surprise." This occurs when you upgrade to a PA-RISC machine only to discover that your third-party software vendors want more in upgrade fees than you originally paid for their products.

Since it implemented tiered (cpu-based) pricing, HP in most cases has given its software customers upgrade credits when they move to a bigger machine. The price structure for HP's COBOL II compiler upgrade is a good example.

But there have been notable exceptions to HP's generosity. When TurboIMAGE was unbundled, for instance, it automatically became the single most expensive HP software product for many customers. And where are the upgrade credits? Think about it when you sign up for that MPE/iX machine.

And let's not forget about software maintenance charges, either. These, too, can go up when you move to a larger cpu. Many organizations pay thousands of dollars yearly in maintenance fees, often for products that haven't been enhanced significantly in years.

The Root Of All Evil ...

The cause of all this aggravation, of course, is money. Software licensing and pricing are inextricably bound together.

Hardware vendors need more revenue from software and services as hardware margins continue to shrink. Software vendors, meanwhile, are looking on with horror as their customer base is eroded away by data center consolidations, mergers and acquisitions, downsizing, distributed computing, client-server architecture and PC LANS.

Upgrade fees are rapidly becoming the last way for vendors to make a high-margin buck. And that buck just happens to stop at the installed base—those who have already made a sizable commitment to the vendor's products and can't afford to shop around.

But after all, whose software is it, anyway? Unfortunately, the short answer to that question is that software ownership is retained by the vendor. You, the customer, have purchased a *license* to *use* the software, subject to the terms and conditions set out in your license agreement.

This holds true for MPE, and for everything else that has been historically referred to as FOS. You don't own FOS. If you sell your machine, (technically) you can't transfer the license to use MPE unless you have HP's permission. And to quote an HP representative on the matter: "HP in general does not transfer software licenses."

Does that leave you, the poor customer with your pockets turned inside out? Not necessarily, but you have to do your homework.

Most people are unaware of even the most general aspects of the licenses covering software that's critical to their organization. My advice: Know your rights. Check the specifics of any software license with your legal counsel. It is a legal document and should be treated as such.

It's In Your Contract

Round up all your software licenses — I'll wait. Did you find them all? How about a copy of your HP Software License Terms (EXHIBIT E30 revision 901205)?

Some things to look out for in a software license:

- Who holds title? Probably not you.
- What type of license is it? Site? CPU? Concurrent? Personal? etc.
- Is there a time limit to the license and does the software stop working when the limit is reached?
- Is the software transferable? Suppose you want to sell your data center to an

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outsourcer? Is your software license transferable to the outsourcer? Remember, the license to use MPE is *not* transferable.

- Does your license mention extra upgrade fees?
- Is support/maintenance required? For how long?
- If the product is off support for any length of time, what options do you have for making it current?
- Do you have source code rights if the vendor discontinues the product or goes out of business?
- Is there a means specified to arbitrate a dispute?
- What is your right to copy? For example, is hot site backup addressed?
- Is using the software to provide services for pay to subsidiaries or third parties addressed?

Nowhere is change going to be more pronounced in the next several years than in the relationship between the software vendor and its customers. As competition for the software dollar increases, vendors will likely introduce novel pricing and licensing models.

Start paying more attention to software licensing alternatives and how to maximize return on the software dollar. Focus on the very real difference between buying hardware and hardware support, and "buying" software and software support. Having choices creates opportunities for the savvy IS manager to exploit.— *John P. Burke is the system manager for Construction Computer Center, Conshohocken, PA.*

Would you like to continue to see articles on this topic?
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yes 348 no 347

[A Better Way...To Pay]

Both vendors and customers have incentives to seek out new pricing/licensing models. However, not all customers want the same thing and not all vendors have the same needs. The move to client-server computing has, for example, made connecting value to machine size difficult for both the vendor and customer.

Possible alternatives in the drive to find new, better, licensing/pricing models are:

Metered or Usage-Based Pricing. Before using this model, a vendor has to decide what to meter and how to meter it. Possible metrics include number of times used, number of transactions processed, CPU time used, wall time used, etc. A disadvantage, other than the obvious complexity, is the fact that metering costs precious CPU cycles and disk space and requires elaborate security provisions to protect the meter — all of which drive up the cost to implement.

Personal Use Licensing. The customer buys licenses for individual users at a price that approximates the typical single-user PC software charge. This option is best for software limited to specific power users.

Concurrent Use Licensing. A license for a specific maximum number of concurrent users, permitted access on a first come, first served basis. Best for software needed casually by many users. With MPE XL, HP made its first foray into concurrent licensing on the HP 3000.

Partition-Based Pricing. Recently introduced by IBM for machines running multiple operating systems. The price is based on the percentage of the system used. There is no real analogy in the HP 3000 world (unless someday HP-UX can run concurrently or in a guest-host arrangement with MPE).

All of these new options are still based on the concept of paying some up front fee plus an ongoing support charge. That's positive cash-flow for the vendor, but a big drag on the customer's budget.

One alternative that could prove palatable for both customers and vendors alike might be to lease software the same way people lease cars. The advantage to the customer is two-fold: 1) preservation of operating capital—less cash outlay upfront; and 2) less restrictive procurement procedures (lower cost means fewer layers of bureaucracy must approve the purchase). For the vendor, this alternative could open accounts that would have been unwilling or unable to part with a large initial license fee. —*J.B.*

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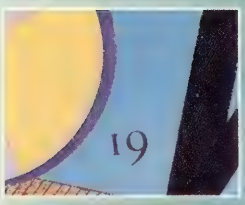
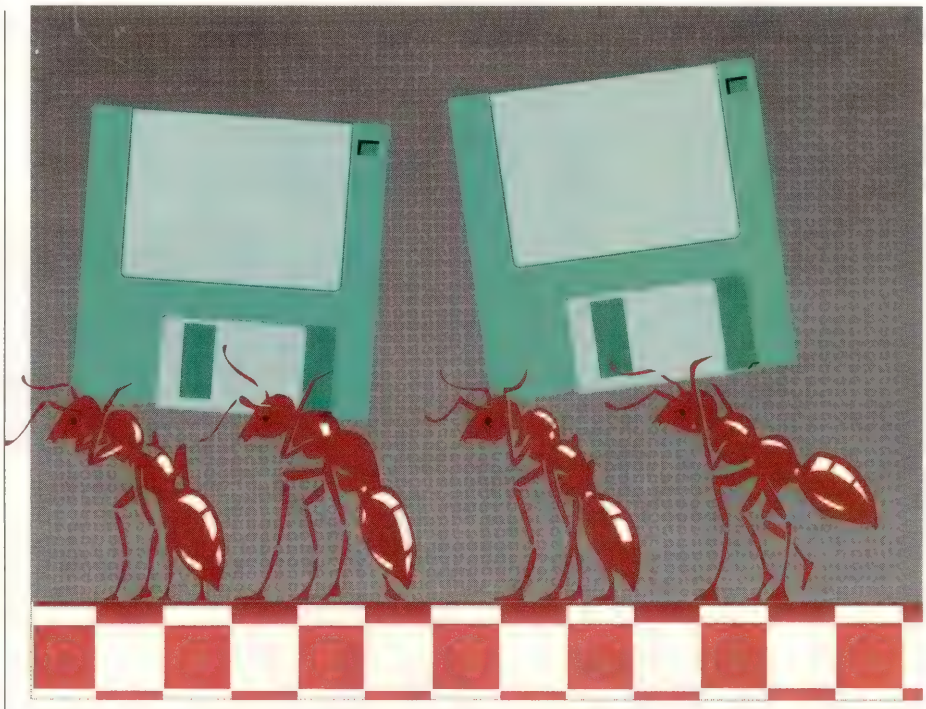


OBJECTIVELY SPEAKING

Richard Riehle

Bug-Free Software?



Some will remember the story about the first computer bug. An early computing device designed using relays began to fail consistently in its calculations. A technician found a moth spanning the contacts in a relay. The moth was given to early computing pioneer, Grace Murray Hopper, who coined the term *bug*. "Bug" is now part of the argot of computer programming. The mummified corpse of the original moth is now on display in the Smithsonian Institution.

It didn't take long for early programmers to adopt the term *bug* to describe problems with software. little no time was lost in progressing to the term *debugging* to describe the process of extermination of these little creatures. The process of debugging has become a standard part of the software development process.

Often, I have heard colleagues say, "There is no such thing as bug-free software." For anyone who places a high value on reliability as a primary goal of software engineering, such a statement rings with a certain cacophony. No, it doesn't ring, it clangs. It makes a noise like a badly chorded accordian. The idea that there is no such thing as bug-free software violates the fundamental notion of software engineering.

What Is A Bug?

If we think about the bug, we realize that it is something that comes into our software from someplace else. The original moth, for example, was not placed in the relay by someone. It flew there all by itself. The moth was an unexpected event that embedded itself in the process. It was not put there by the designer, on purpose or by mistake.

This leads us to propose a new definition: A bug is an infection that originates outside a software entity, attaches itself to some part of that software, and results in behavior that was neither planned or anticipated.

Managerial Responsibility

Programmers aren't expected to be anything other than programmers. For example, a programmer may be assigned to create software to implement a data compression algorithm for a set of disk drives. What language will that programmer use? If this programmer is anything like those I know, the language of choice will be 1) the one that's the most fun, or 2) the language the programmer knows best. Instead, the language standard for the organization or the project should be a managerial decision. Unfortunately, too many managers have lost touch with the technical skills required to make that decision so it's left up to the programmer.

This same level of managerial involvement is needed when setting the tone for a software engineering environment. If software engineering management begins to insist on replacing the word *bug* with the word *mistake*, there will be an eventual change in the attitude of the people who make and correct those mistakes. The organization may experience real benefits if that change in attitude results in better software.

Reliability — Our Main Goal

There have been various lists of goals for software engineering. One word that appears on every list is reliability. This is usually interpreted to mean the software behaves as intended. It's error-free.

The quality question comes up continuously in software organizations. Is

Is software, by its very nature, so complex that we can never be sure there are no mistakes in it?

software, by its very nature, so complex that we can never be sure there are no mistakes in it? No one has given a final answer. Moreover, reliability is a goal, not necessarily an achievement.

It's true that our software systems are becoming more complex. There's even a theory about software engineering that says "Software engineering is the management of complexity." As the demands of our clients become more sophisticated, our software becomes more complex. Medical systems support online patient monitoring devices, missiles are programmed with terrain mapping algorithms that can correlate the current position of the missile with a map of the area. Strategic Defense Initiative (SDI), Space Station Freedom and communications satellites all stretch our contemporary software engineering skills far beyond where we have been. Some software professionals believe that such problems as SDI are not only exceptionally difficult, but dangerous with our current state of technology.

One reason for the move in the direction of software as an engineering discipline is to discover new principles, methods and technologies for meeting the needs of these increasingly complex software problems. Many believe that object-oriented technologies will contribute to this process. But technology alone won't suffice. We need entirely new ideas to meet this need. The ideas will be the foundation for new software design principles. Those principles, when discovered, will move us toward our goal of reliability.

Striving for reliability should produce error-free software. Because we never can guarantee "bug-free" software, we can hope that emphasis on reliability also will result in bug-resistant software. — *Richard Riehle is president of AdaWorks in Palo Alto, CA.*

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NETWORKING

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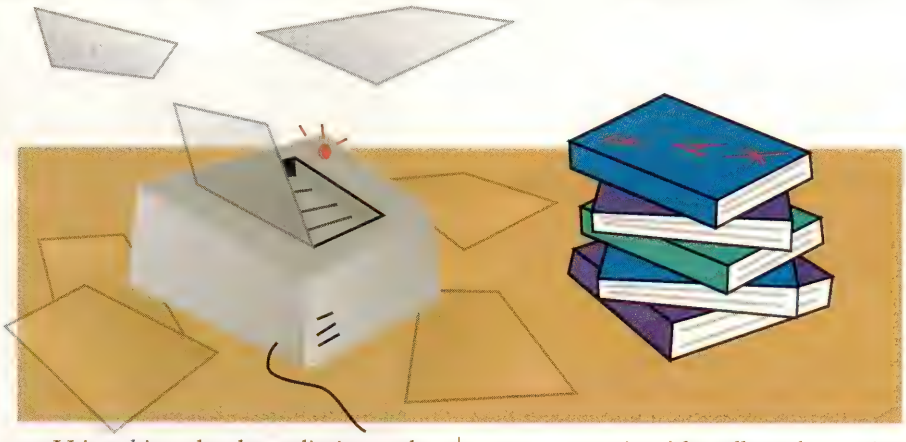

Fax is probably the fastest growing, most pervasive technology to come along in the last 10 years.

If you're interested in purchasing a fax machine, what type should you look for? Further, if you'd like to integrate fax capabilities with your HP computer systems, what options are available?

When you look for a fax system, make sure it is a GROUP 3 fax machine. GROUP 3 is the current standard and makes up 90 percent of the market. Machines using GROUP 1 and GROUP 2 are obsolete technology and shouldn't be purchased. GROUP 4 is a digital standard for use over ISDN networks.

Fax machines come in various configurations. The most common is the standalone version used in most office environments. In the PC/UNIX marketplace the fax/modem combination is a big seller. These devices come as either an external box or internal card. They function as modems but, when used with special fax software, they can send/receive faxes like a standalone machine. However, these units allow you to save the fax image to your hard drive.

Another type of unit is the fax device that connects to your laser printer. These units are complete fax systems but without the printing device. By allowing the unit to share a printer you already own, you get better quality print for less money. JetFax, available from Solution Centers (Placerville, CA), is an example of this type of product.

The last type of fax machine is one that acts as a standalone fax unit but also can be driven by a computer system. These units are found connected to large computer systems faxing data to customers. Using this technology eliminates the need to print out and then manually fax documents. These machines also can be used to provided higher availability for systems that would otherwise use an integrated fax card. Even if the computer goes down, faxes still can be received.

Printing Options

Choosing a fax machine also means deciding how your faxes should be printed. The least expensive machines use thermal paper. Thermal paper comes in rolls; the machine cuts each fax page as it is received. Thermal paper, however, has a tendency to curl and is therefore hard to file. Thermal printing also fades with time, and many businesses spend precious time and dollars photocopying thermal faxes for filing and record retention.

Taking this into consideration, you also may want to protect yourself by making copies of contracts and other legal documents, because some states only accept original inked documents as legal evidence.

Cut sheet machines use many technologies for printing. Newer machines use laser printer engines to provide the highest quality. HP also introduced a machine using its inkjet technology. To take advantage of these superior capabilities, fax machines now are equipped with new scan options that allow the passing of 300 by 300 dpi images between compatible machines.

Software Fax

For the HP user community, it is possible to fax from your MPE V, MPE XL, or HP-UX machines to the outside world.

One company, that is a pioneer in HP 3000 faxing is Message Transport Systems (Salt Lake City, UT). Its product, FaxMate, may be the only software offering inbound fax capability for the HP 3000. This capability requires a laser printer for output and a PC equipped with WRQ's Reflection 7 if you want to view fax input online. Forms overlay, signatures, and letterhead options all are supported. To fax a document you create a spoolfile with the appropriate options on the fax device and away it goes. The fax device is connected to the HP 3000 via a serial port.

STR Software Company (Midlothian, VA) offers FAX/3000, which can take data from the MPE Spooler (a programmatic interface) via interactive dialogue, and electronic mail systems such as HP Desk or WRQ's PostHaste. You also can integrate letterhead, forms and signatures with your data. FAX/3000 also uses an

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external fax device connected to a serial port.

FAX Link/3000 from Hillary Software (Spring Lake, NJ) also allows you to fax documents directly from HP Desk. FAX link can also handle any type of graphics format and allows you to retransmit a fax automatically. What's more, with FAX Link, you can schedule transmissions to take advantage of cheaper long-distance rates.

Fransen/King Ltd. (Fircrest, WA) offers something a little different in its FORMFAX system that can be connected to either a serial port on your HP 3000, put on a network, or both. When connected to your network it is usable by any networked HP 3000, plus any Novell, Banyan and LanMgr workstations. FORMFAX features form capabilities similar to the other systems mentioned and is LaserJet compatible.

If you're using UNIX systems, such as HP-UX, you can check out TruFax from Devcom Mid-America Inc. (OakBrook, IL). TruFax is a system that allows users to fax directly from their UNIX workstations or terminals. Inbound faxes can be printed or viewed directly on an X capable terminal or PC.

Once you get your fax system installed, you'll find lots of uses for it — EDI, advance shipping notices, customer status bulletins, invoicing, purchasing, sales product information requests, and much more. Fax manufacturers also are trying to differentiate their systems by offering extra features. Depending on your needs, some could be more valuable than others. — *Tim Cahoon provides wide area network and HP technical support for the manufacturing operations of a Fortune 500 company.*

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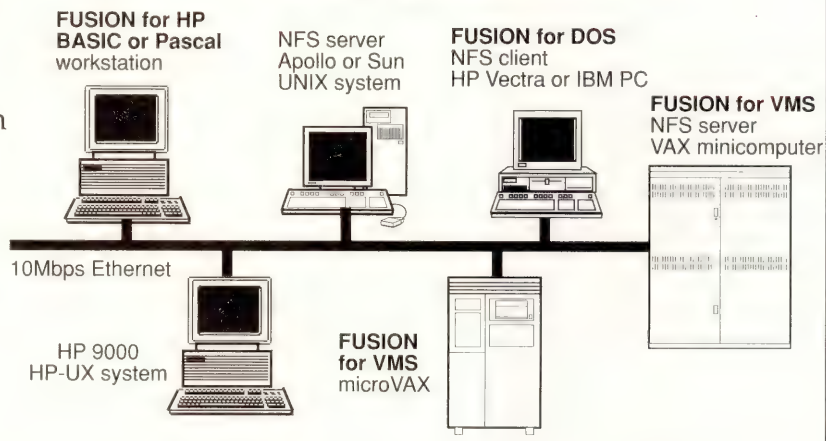

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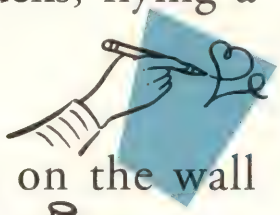
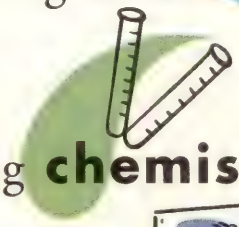
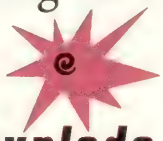


DC-10 into a **VOLCANO**, drawing on the wall



without getting in TROUBLE, watching **chemistry**



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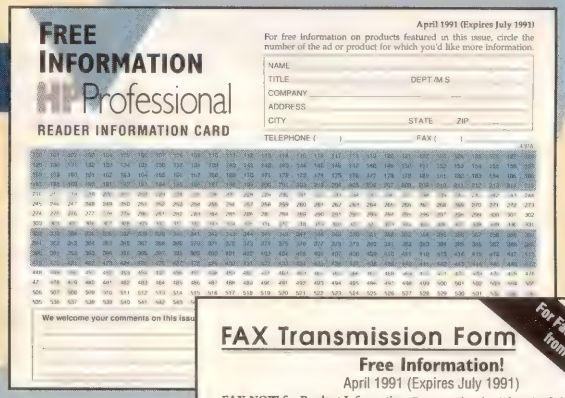
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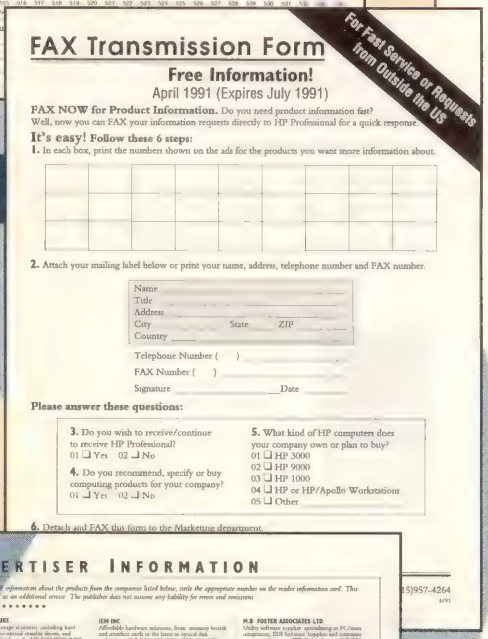
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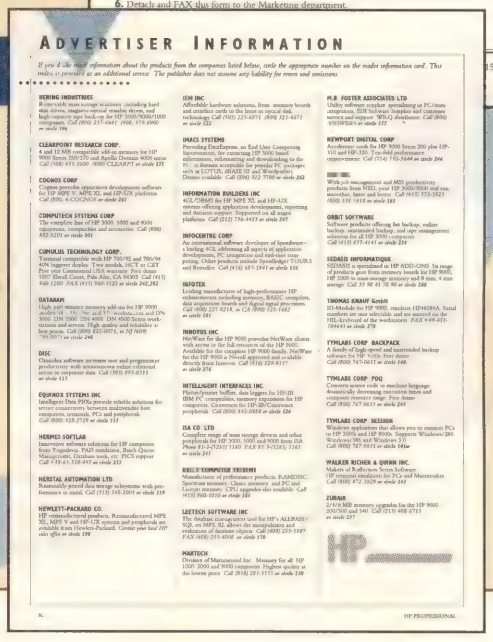
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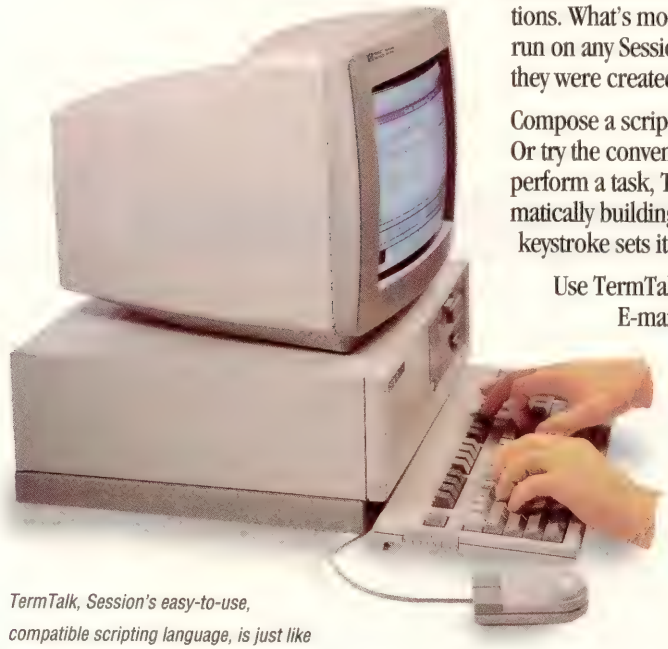
Hand your communications tasks over to TermTalk.

Session includes TermTalk, a unique scripting language that streamlines your routine operations – or your most sophisticated PC-to-host interactions. English-based, block-structured, and friendly enough for non-programmers, TermTalk provides extensive control over Session's communications with hosts and other PC applications. What's more, compiled TermTalk scripts run on any Session platform, no matter where they were created.

Compose a script using TermTalk's built-in editor. Or try the convenient script recorder. As you perform a task, TermTalk follows along, automatically building the script. Next time, a simple keystroke sets it in motion.

Use TermTalk to automatically log on, send E-mail, retrieve host data and add it directly to your spreadsheet, print PC files on host printers, and much more. We even give you the tools to convert existing AdvanceLink® or Reflection® command files to TermTalk scripts.



TermTalk, Session's easy-to-use, compatible scripting language, is just like having your own personal assistant. Use it to handle all your PC-to-host tasks.

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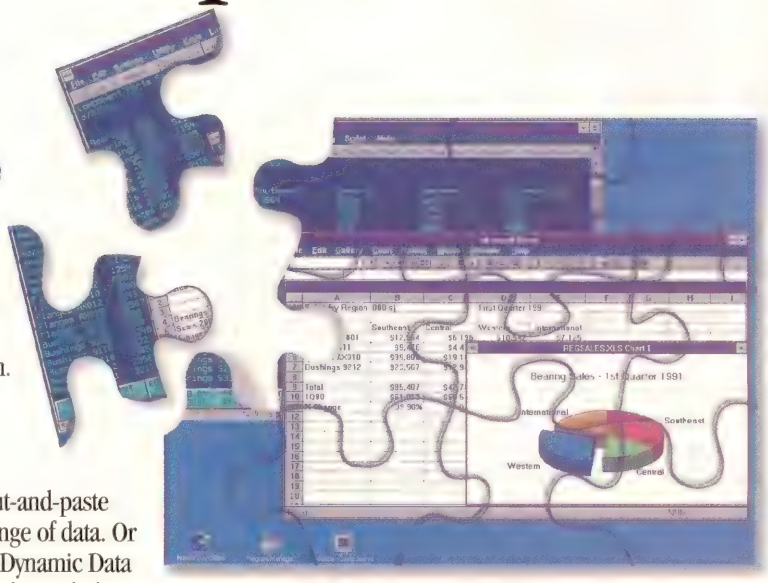
and Desktops Meet.



Session offers Microsoft's Dynamic Data Exchange (DDE) and support for HP NewWave to help you retrieve, view, and integrate information from a variety of sources.

Access and integrate the information you need, when you need it.

Working on a report? Need monthly sales and expense figures? Need data from several sources? No problem. Session delivers the data-sharing capabilities you've been waiting for.

For example, you can use cut-and-paste for a simple one-time exchange of data. Or use Session and Microsoft's Dynamic Data Exchange (DDE) to build real-time links between your host and your other Windows applications. And, Session for HP NewWave lets you bring host data within reach of NewWave's advanced object management capabilities.

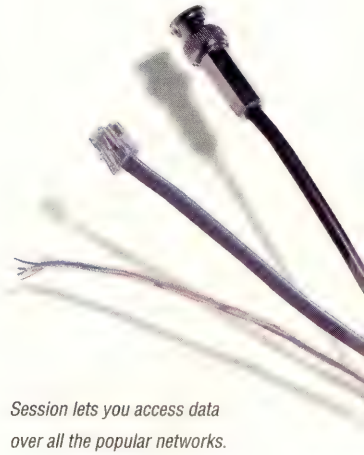
Weary of access limitations? Forget what PC-to-host connections used to be.

When it comes to connecting to HP, DEC VAX, and UNIX hosts – all from the same package – some products are plagued with limitations. Not Session. In fact, Session allows multiple – *even simultaneous* – connections with different host applications *and* different hosts, including your HP 3000, HP 9000, HP 1000, DEC VAX, and any UNIX host.

Wide-ranging connectivity and networking capabilities.

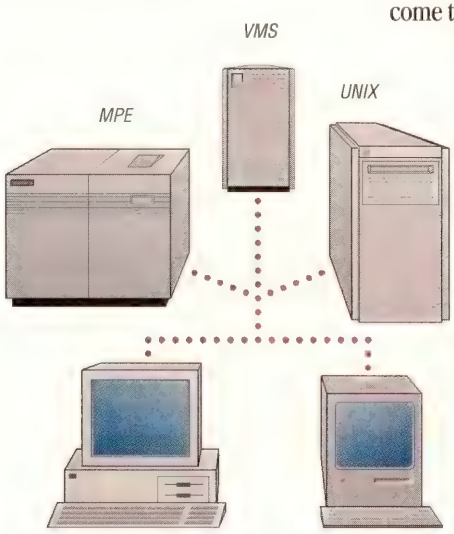
Wondering about Session's networking capabilities? Session supports all the popular networks: Novell,™ Ungermann-Bass,™ Banyan,™ Microsoft LAN Manager,™ AppleTalk,™ and HP's AdvanceNet products. You can also perform multiple sessions over virtually any LAN.

Impressed? Well, these are just a few of the ways Session can make PC-to-host connectivity simpler – and more productive – for your organization.



Session lets you access data over all the popular networks.

Session is where hosts and desktops really come together.



Call us now for your FREE copy of the Session Idea Book, which includes ideas on how our customers are putting Session to work today. Interested in trying Session? We'll send you a fully-operational trial copy with a full 30-day, money-back guarantee. No obligation. Just call us.

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CIRCLE 243 ON READER CARD

NP NEW PRODUCTS

GDS Solutions Unveils GDS For HP Apollo 9000/700

GDS Solutions announced its Graphic Data System (GDS) on HP Apollo 9000 Series 700 PA-RISC workstations.

GDS combines precise graphic data with non-graphic attribute data. It also combines mathematical precision with extensive spatial database capabilities and a flexible graphics language. GDS offers the functionality to combine raster and vector data to accomplish complex geographic modeling and analysis. GDS can interface directly to a variety of relational database systems including Oracle, Rdb, DB2 and others.

Contact GDS Solutions, 13736 Riverpost Dr., Maryland Heights, MO 63043; (314) 344-4162.

Circle 400 on reader card

MARTECH Offers Memory Upgrades

MARTECH released 16, 32 and 64 MB memory modules for upgrading HP UNIX-based Series 9000 Model 807 through 877 and MPE-based Series 3000 Model 917 through 977 computer/servers.

When the 8x7/9x7 is used as a server, a full complement of RAM improves client service by reducing disk accessing at the host. At the client end of the network, more local memory can reduce the amount of data flowing across the network, improving both local performance and network response.

Contact MARTECH, 1151 W. Valley Blvd., Alhambra, CA 91803-2493; (818) 281-3655.

Circle 391 on reader card

AutoSIGHT Inc. Releases MINI 4.0

AutoSIGHT Inc, released MINI 4.0, a low-overhead, compact viewing program.

Improved features include: accurate display of AutoCAD font and shape files; drawing display speed; and true AutoCAD line types, entity thickness, wide polylines and big fonts.

New features include: 3-D viewing; printing support for more than 300 printers; plotting support for HP and compatible plotters; and support for HP-GL/2 plot files.

MINI 4.0 is priced at $99 for one user and network versions start at $399 for a five user license.

Contact AutoSIGHT Inc., P.O. Box 362086, Melbourne, FL 32936-2086; (407) 242-4865.

Circle 393 on reader card

Workstation Source Creates New 386s From Old 286s

Workstation Source announced MakeIt 386. The old Intel 286 chip is removed from the motherboard in the computer and the MakeIt 386 is put in its place. All changes in the interfacing are handled by a custom chip that is piggy-backed on the Intel 386 chip in the tiny module. The whole package occupies the same space as the original 286 chip.

The MakeIt 386 provides full support for extended memory on the motherboard or in an add-on memory card, and it is compatible with extended memory managers such as QEMM 386 and 386 MAX. It will support a 287 math coprocessor, and with an Intel 287XL coprocessor it provides full 387SX compatibility.

Two package designs are available. The PGA (Pin Grid Array) has a collection of pins beneath the chip, and the PLCC (Plastic Leadless Chip Carrier) has a square shape with metal strips around the periphery. Both 16 MHz or 20 MHz version of the 386 are available.

Contact Workstation Source Ltd., 16 Auckland Close, Maidenhead, Berkshire SL6 8QB; 0628-75252.

Circle 396 on reader card

Quest Software Inc. Announces Network Products

Quest Software announced the NBSpool Printer Gateway that allows any HP 3000, 9000, or any UNIX system to output to printers attached to a Novell or LAN manager network. The gateway system converts TCP/IP to the appropriate protocol used by the PC LAN giving users transparent access to any printer queue on the network. The gateway doesn't require NetWare or LAN manager on the host system.

Quest also announced a new module for NBSpool that allows HP 3000 users to directly access the new HP TCP/IP card for the LaserJets. LaserJets can be connected to a LAN allowing HP 3000 and 9000 users the ability to write output directly to the printers. With the NBSpool JetDirect module reports are transparently routed to any networked printer.

Contact Quest Software Inc., 610 Newport Center Dr., Ste. 890, Newport Beach, CA 92660; (714) 720-1434.

Circle 395 on reader card

SortMagic Introduced For HP 3000s

Magic Software for the HP released SortMagic/Classic and SortMagic/XL for the HP 3000.

Compatible with SORT/3000, SortMagic reduces sort times by more than five times on Classic 3000s, and by up to 10 times on XL machines. If disk space is a concern, SortMagic can use 50 percent less disk space than SORT/3000.

For Image users, SortMagic retrieves and sorts data from databases quickly. Retrieval times alone are often 15 times faster than those for Query.

Contact Magic Software for the HP, 1003 Main St., Ste. 300, Grand Junction, CO 81502; (800) 624-4255.

Circle 394 on reader card

PowerHouse InQuizitive Moves To HP-UX

Cognos Inc. announced that its PowerHouse InQuizitive end-user report writer now is available for HP 9000 Series 800 business systems and servers and HP 9000 Series 700 workstations running under HP-UX.

Information can be predefined by MIS

and presented to selected end users as simple, logical "views." With PowerHouse InQuizitive, MIS controls data access and integrity. It features a flexible, WYSIWYG report painter. It's a complementary end-user tool for the production report writer in PowerHouse 4GL.

InQuizitive generates alphanumeric bar graphs with automatic or user-defined legends, complete with titles and scaled bar heights, and outputs them directly to either a terminal or a printer.

Price is $5,000 to $25,000 based on the number of users and CPU size.
Contact Cognos Inc., 67 S. Bedford St., Burlington, MA 01803-5164; (617) 229-6600.

Circle 390 on reader card

Kingston Delivers Memory Upgrades

Kingston Technology Corp. announced memory upgrades for the HP Series 9000 workstations and Series 9000 and 3000 business servers.

Kingston shipped 1, 2, 4 and 8 MB memory upgrades for the HP Apollo Series 9000 Model 700/RX workstation as well as 8, 16 and 32 MB upgrades for Models 705 and 710. Kingston also provides 64 MB low profile upgrades as well as 16 and 32 MB upgrades for HP Apollo Series 9000 Models 720, 730 and 750 workstations.

For HP Series 9000 Models 8x7 workstations and Series 3000 Models 9x7 and 9x7LX business servers, Kingston is shipping 16, 32 and 64 MB upgrades.
Contact Kingston Technology Corp., 17600 Newhope, Fountain Valley, CA 92708; (714) 435-2600.

Circle 389 on reader card

EasyReporter Enters The Windows World

EasyReporter 6.0, the latest release of Speedware Corp.'s report writing end-user tool, used the strategy of windows technology to present users with a report writer, using simple keystrokes to create simple to complex reports. Written in SPEEDWARE 4GL, it will initially run on the HP 3000.

EasyReporter 6.0 has the look and feel of PC products and incorporates movement consistent with the PC. Windows and menus in the EasyReporter interface incorporate OSF/Motif industry style standards.

EasyReporter continues to allow combining data files of various types in logical views. Files are linked using database and file keys to create a view using concatenated keys, created variables and partial fields as value.
Contact Speedware Corp., 150 John St., 10th Fl., Toronto, ON M6V 3C3; (416) 469-2880.

Circle 387 on reader card

Intelligent Interfaces Boosts HP 9000/300 Memory

Intelligent Interfaces announced new memory boards to assist older HP 9000 computers.

The MicroRAM 332 offers a solution for increasing the memory capacity of HP Model 332 workstations up to a total of 8 MB. It is available in 1 or 4 MB increments, doesn't require any preinstallation switch configurations and is recognized automatically by the HP Model 332.

The MicroRAM 340 4 MB board allows the user to upgrade the HP Model 340 to 16 MB of memory in 4 MB increments. Preinstallation configuration is not required.

MicroRAM 1-8 memory boards offer a fool-proof way to upgrade memory on HP Model 2xx/310/320 workstations without using up all of the DIO slots. A 6 MB version is available, as well as the traditional 1, 2, 4 and 8 MB models.

All MicroRAM models are 100 percent compatible with HP and other vendor memory boards, as well as HP and third-party application software.

Prices are: $495 for MicroRAM1, $695 for MicroRAM2, $995 for MicroRAM4, $1,395 for MicroRAM6, $1,695 for MicroRAM8, $995 for MicroRAM 340, $345 for MicroRAM 332, 1 MB, and $895 for MicroRAM 332, 4 MB.
Contact Intelligent Interfaces Inc., P.O. Box 1486, Stone Mountain, GA 30086; (404) 381-9891.

Circle 385 on reader card

TeamOne Systems Announces Data And CM System For HP

TeamOne Systems Inc. announced that its TeamNet data and configuration management (CM) system has been ported to HP Apollo 9000 Series 700 and 400 workstations as a part of HP's Open Migration Program.

TeamNet's UNIX-based cross-functional system can utilize any HP Series 700 or 400 workstations as a host server to support

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networked design and development teams.

It provides distributed CM and version control on all file types for any development project. It transparently tracks file modifications made by any tool that runs on any platform on an NFS-based network to provide an automatic audit trail. Tools can be immediately integrated into the TeamNet environment with no need to modify or encapsulate them prior to use.

Licenses cost $3,000.

Contact TeamOne Systems Inc., 710 Lakeway Dr., Sunnyvale, CA 94086; (408) 730-3500.

Circle 381 on reader card

Natural Language 5.0 Targets Desktop Market

Natural Language Inc. (NLI) introduced Natural Language Release 5.0, an English-based querying tool for relational databases. It features an embedded, intuitive GUI for ease-of-use and an enhanced application development environment that reduces the development cycle.

Release 5.0 is the first Natural Language product that fully supports desktop workstations, giving system programmers a low-end product that requires considerably less development time to deliver a departmental Natural Language solution.

Graphics, table manipulation, data analysis and reports now are accessible through pull-down menus. Users focus on the data they are seeking by browsing through the list of sample questions.

Other features include online help and more sophisticated report generator that lets users manipulate tables and generate and save reports quickly and efficiently.

Natural Language 5.0 supports the following desktop platforms: HP 9000/7xx, 386-class PCs under SCO UNIX, Sun 4 SPARCstation, DECstation and IBM RS/6000. Price starts at $4,500.

Contact Natural Language Inc., 2910 Seventh St., Berkeley, CA 94710; (310) 841-3500.

Circle 384 on reader card

Rosetta Announces RT4224M MICR Page Printer

Rosetta Technologies Corp. introduced its new MICR printer for mid-volume users. The RT4224M LED printer utilizes approved MICR toner and fonts to product full page 300 by 300 dpi text, graphics and MICR encoding of checks, voucher, or any other MICR documents.

The RT4224M has 4 MB RAM standard expandable to 8 MB. Centronics parallel, RS-232C and RS-422 interfaces are standard. It is configured with built-in dual 3 1/2-inch floppy drives. An optional internal SCSI hard drive is also available. E13B MICR font is included with the RT4224M. HP-IIID emulation is standard.Price is $24,995.

Contact Rosetta Technologies Corp., 9417 Princess Palm Ave., Tampa, FL 33619; (800) 937-4224.

Circle 380 on reader card

HP Enhances ALLBASE/SQL

HP introduced an enhanced version of its relational database management system (RDBMS). HP ALLBASE/SQL Version F.0 helps customers reduce data-center costs and integrate heterogenous data and computing resources while moving to open systems and client-server computing.

New data-center features include 30

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Ferris Mahadeen, Chief Engineer, Aimco Technology
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percent better performance, record-level locking, concurrent B-trees, unattended backup, throttle-wait queue and shadowing. New client-sever and distributed computing features include stored procedures, triggers, business rules, two-phase commits and new client-server tools.

HP ALLBASE/SQL is designed for high-volume online transaction processing (OLTP) computing and coexistence with HP and non-HP databases in heterogenous environments.

HP ALLBASE/SQL runs across all HP 3000 and HP 9000 platforms and has full read/write connectivity to IBM's DB2.

Pricing ranges from $1,500 to $30,000.

OMNIDEX For Open Systems Unveiled By DISC

Dynamic Information Systems Corp. (DISC) unveiled its platform-independent indexing software.

OMNIDEX Version 3.0 improves retrieval performance dramatically on all major types of databases. Benchmarks have been performed on TurboIMAGE/iX, Oracle, Informix, Allbase and flat files.

OMNIDEX uses its proprietary indexing technology to locate requested data instantly without having to scan it. OMNIDEX for Open Systems will be priced on a user-basis, starting at $2,000 per user.

Contact DISC, 5733 Central Ave., Boulder, CO 80301; (303) 444-4000.

Circle 379 on reader card

Precision Visuals Launches PV-WAVE Developer Series

Precision Visuals Inc. released the PV-WAVE Developer Series, three new packaging options for its PV-WAVE family of VDA development tools.

The developer series — offering different combinations of PV-WAVE Command Language (CL), optional software modules, training and consulting services — consists of PV-WAVE: Power-Up, PV-WAVE:Professional and PV-WAVE:Advantage.

PV-WAVE:Power-UP is targeted at the individual developer or small team, and offers a "jump start" for building project-level applications. Price is $8,875.

PV-WAVE:Professional is intended for larger development projects and internal application development groups who provide contract work within their company or organization. Price is $10,835.

PV-WAVE:Advantage provides the full spectrum of VDA software and services for OEMs and focused internal development groups to build commercial-grade data exploration and visualization applications. Price is $15,440.

Contact Precision Visuals Inc., 6230 Lookout Rd., Boulder, CO 80301; (303) 530-9000.

Circle 377 on reader card

MDSS Discloses FACTIVITY For HP 3000s

MDSS Inc. introduced FACTIVITY, a shop-floor-based executive system.

FACTIVITY is a suite of applications that includes: finite scheduling, lot traceability, preventive maintenance, labor reporting, job dispatching, activity performance analysis (time), job costing (money) and electronic data interchange (EDI) functions.

The FACTIVITY modules, bundled with existing MDSS software for material planning (MRP II) and financials, will provide HP 3000 users in the automotive, electronic,

ANNOUNCEMENT:

Equinox Survives Hurricane Andrew

Following a brief period of relocation and limited communication, we are pleased to announce that Equinox Systems, Inc. of Miami has resumed normal operation.

Although the Company's headquarters lost electric and phone service, a rapid recovery program permitted customer service and limited shipments to resume within one week after the storm. We are now making volume shipments, and have returned to full staff.

Equinox has temporarily relocated its operations to Broward County, an area unaffected by Hurricane Andrew. Our toll-free support number (800-275-3500) is fully staffed, and our new local number (305-791-6061) is operational.

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consumer products, and metals and plastics industries with a complete MRP II/Shop Floor Execution system.

The system runs on an HP 3000 networked in a client-server mode.
Contact MDSS Inc., 1717 E. Ninth St., 300 E. Ohio Bldg., Cleveland, OH 44114; (216) 861-8100.

Circle 373 on reader card

Client-Server Capability Added To Reflection For Windows

Walker Richer & Quinn (WRQ) announced a client-server development tool that will be released as one of the new features in version 4.0 of Reflection terminal emulation software for Windows.

PPL (Process-to-Process Link) for Windows will ship with Reflection 1 (HP text terminal emulation) and Reflection 2 (VT320 emulation).

PPL supports HP 3000 hosts, UNIX and any Windows development environment that uses dynamic link libraries. Supported development environments include C, C++, Visual Basic, Powerbuilder, Turbo Pascal for Windows, ToolBook and Actor.

To use PPL's messaging capabilities, the developer writes both a Windows program and a host program. At run-time, Reflection makes the connection, and PPL passes the data between the host and the PC.

For those developers who want to avoid programming on the HP 3000, an HP PPL Toolkit is available. The toolkit allows the developer to call HP intrinsics from the PC and uses the HP 3000 essentially as a file server.

The Reflection for Windows Software Developers Kit is priced at $3,995.
Contact WRQ Inc., 2815 Eastlake Ave. E., Seattle, WA 98102; (800) 872-2829.

Circle 376 on reader card

Delta Microsystems Enters HP 9000 Market

Delta has been a software developer and subsystem integrator for the Sun and UNIX workstation markets.

Delta will introduce BudTool 4.1, a product that automates backups and retrievals across heterogeneous UNIX networks. This version will be compatible with HP 9000 workstations 300 and 700 series.

BudTool 4.1 automates the entire backup process by allowing a yearly backup schedule to be set for an entire network in a one-time operation. On schedule, the backups occur without manual intervention. The software has the ability to track all files and maintain an online file history database allowing the user to scroll through files and select the file to be retrieved. This process enables users to easily recover his own files and in turn reduces the System Administrator's workload.

Price starts at $5,995.
Contact Delta Microsystems Inc., 111 Lindbergh Ave., Livermore, CA 94550; (510) 449-6881.

Circle 372 on reader card

Bradmark Announces DBGENERAL 6.2

Bradmark Technologies announced release 6.2 of DBGENERAL. Release 6.2 features a second generation NM Master capacity change with a two to three times performance improvement, a NM detail capacity change with a two to three times performance gain from the CM version and an NM detail dataset analysis and repair.

Section 6, the Test Database Generator, has been expanded to include a new window-driven, native mode module that is used to

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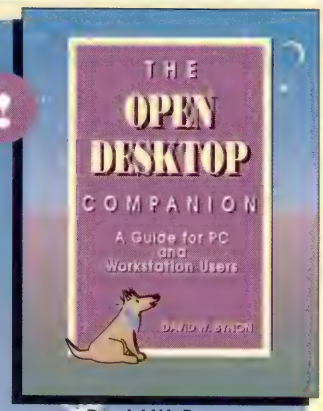

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HPFH0992

build test database from production databases by copying all the data relating to requested records.

The DB-KEY-CHANGE product has now been bundled in DBGENERAL for MPE/iX.

Contact Bradmark Technologies Inc., 4265 San Felipe, Ste. 800, Houston, TX 77027; (713) 621-2808.

Circle 375 on reader card

Netron Inc. Introduces NETRON/CAP For HP-UX

Netron Inc. announced NETRON/CAP for HP-UX, a full CASE toolset implementation for HP's HP-UX RISC system. NETRON/CAP is a reusability-based COBOL generator.

NETRON/CAP consists of a library of reusable model solution COBOL "frames," an integrated toolset supporting rapid prototyping, interface and logic design, and code assembly and utility functions.

Price is $10,000 per user.

Contact Netron Inc., 99 St. Regis Crescent N., Toronto, ON M3J 1Y9; (416) 636-8333.

Circle 397 on reader card

New RISC X Station Unveiled By HP

HP expanded the HP 700/RX RISC X station family with the introduction of the Model 19Ga.

The Model 19Ga comes standard with 4 MB of memory and a 19-inch high-resolution 1,280 by 1,024 grayscale monitor that displays 256 levels of gray. Price is $3,995.

Pro Software Writes Pro_EDI/3000 For HP 3000s

Pro Software Inc. released Pro_EDI/3000, an EDI translation and document management utility that runs on HP 3000 computers under the MPE and MPE XL.

Pro_EDI/3000 allows users to design application interface files, define transaction sets on a trading partner by trading partner basis and controls the movement of data between the application interface files and the EDI files. The translators may be run from existing job streams or invoked from other existing programs. The document manager module tracks document flow each step of the way through the translation and transmission processes.

Pro_EDI/3000 supports ANSI X.12, AIAG, TDCC, UCS, VINS, WINS and other North American public standards, and UN/EDIFACT.

Contact Pro Software Inc., Ste. 240, 725 Barclay Circle, Rochester Hills, MI 48307; (313) 853-2444.

Circle 388 on reader card

Bristol Group Debuts IsoFax For HP Apollo

The Bristol Group extended the platform support of IsoFax software-based fax package to the HP Apollo 9000 Series 700 and 800 workstations.

IsoFax communicates with heterogeneous networks of workstations through remote procedure calls. After making initial contact with the fax server on a server workstation, the fax automatically goes to the specified workstation in the network. The server workstation and workstations on the network can be HP Apollo 9000, Sun or IBM RS/6000, provided the corresponding software versions of IsoFax are installed.

IsoFax 5.0 supports standard Direct Inward Dialing (DID) phone service. Faxed messages are automatically routed to a specific terminal where access is further controlled by use of a confidential user ID code.

IsoFax allows users to create documents using industry-leading applications, including InterLeaf, FrameMaker, Island Draw/Paint/Write, Lotus 1-2-3, AutoCAD and Oracle.

Contact The Bristol Group Ltd., 100 Larkspur Landing Circle, Ste. 200, Larkspur, CA 94939; (415) 925-9250.

Circle 383 on reader card

Syntactic Online Reference Provides Help With MPE XL

G.S. Communications released version 1.1 of Syntactic Online Reference (S.O.R.), an electronic quick reference card for MPE XL professionals.

S.O.R. provides instant help on MPE XL commands, intrinsics, error codes and messages, Command Interpreter (CI) variables and more.

New features in version 1.1 include documentation of MPE XL functions and a fast look-up mechanism. S.O.R. now provides a description and examples of all CI functions in the MPE XL environment.

Introductory price is $29.95.

Contact G.S. Communications, P.O. Box 29565, Richmond, VA 23242-0565; (804) 750-1746.

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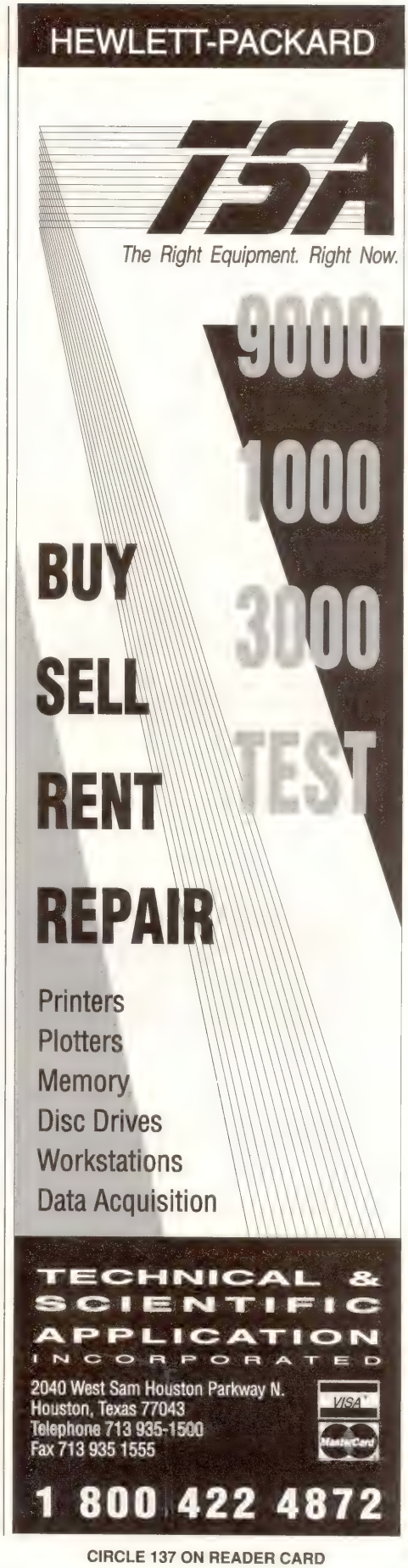

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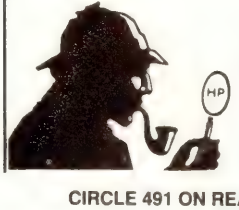

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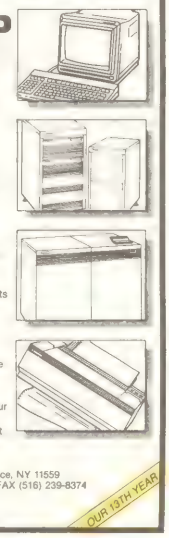

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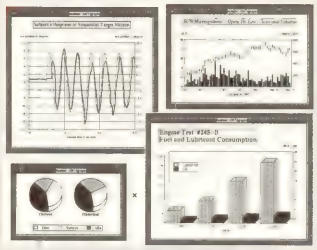

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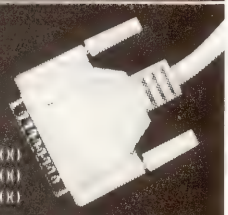

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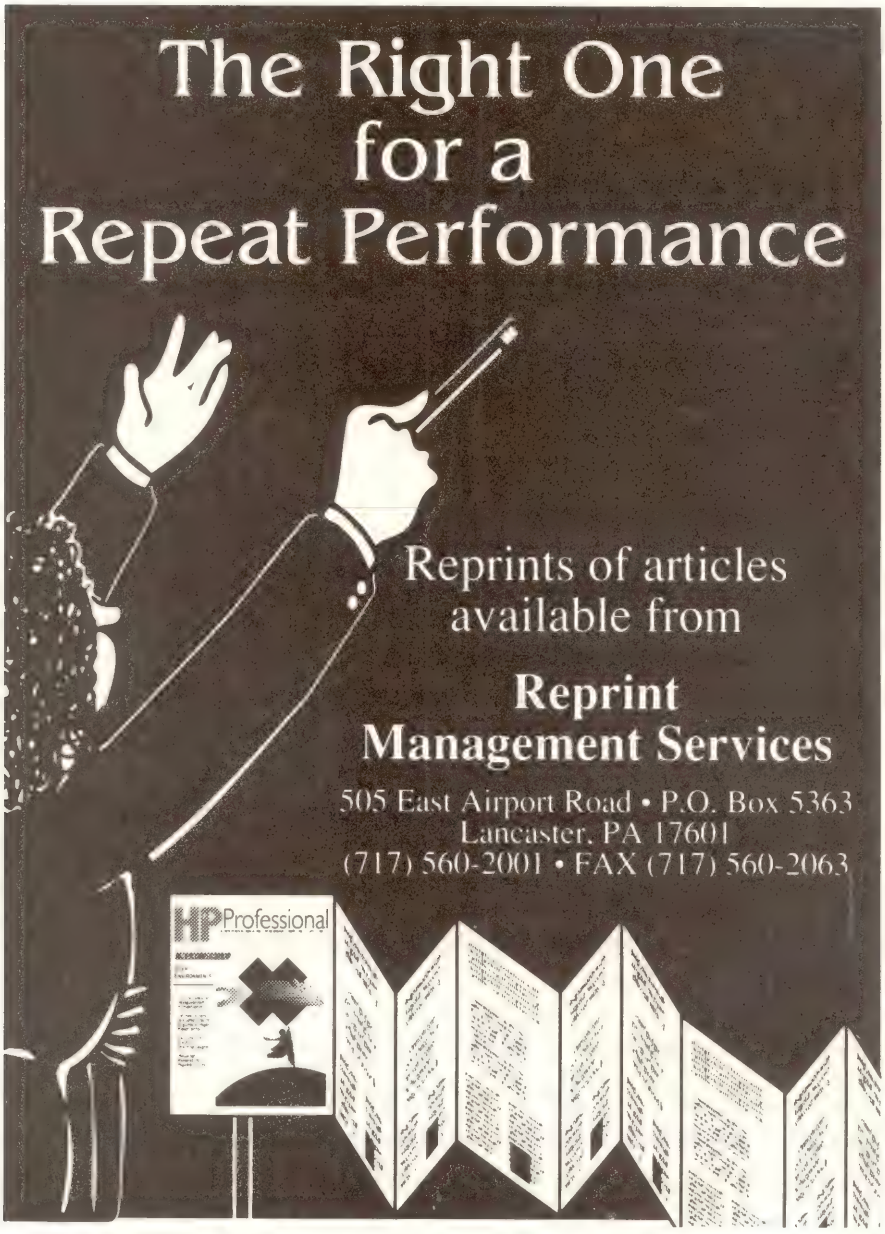

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Peak Performance

According to the *Detroit News*, there is a banker in town who has found a great scam. It might not be as profitable as pillaging a savings and loan, but it's a good scam nonetheless: He has transformed his job into performance art.

Vincent A. Carducci is a local artist who also happens to be the vice-president of a bank. The art angle, according to the *News*, is Carducci's way of "interpreting reality in a way that packages it as art. It's a comment on the foibles in art and business, making the point that art should be out in the world where people can get at it."

The title of Mr. Carducci's performance is "Getting Over at the Office." According to one of his press releases, "The performance, which has indeterminate spatio-temporal boundaries, will investigate cultural traditions, societal customs, and personal ... patterns in American bureaucratic lifeworlds." Carducci holds to Andy Warhol's contention that "Being good in business is the most fascinating kind of art." The *News* quotes Carducci as observing that "Warhol's whole life was a performance."

Review And Opinion

I can't say that I've always been a big fan of performance art. I tend to think that many of these so-called artists are just pretentious poseurs. Even Carducci has some problems with most performance art. He's quoted as saying, "A lot of it isn't very good. It's theatrical in a way that operates on a simplistic level."

Still, I can identify with the tongue-in-cheek critique of life and art embodied in Carducci's performance. It may or may not be the "radical approach to blurring the boundaries between art and life" that a New York sculptor and art critic was credited with observing, but I like this guy. He's got the right attitude, and has found a way to have fun doing his job. It's too bad he's not a computer jockey, but we might still be able to learn something from him.

All I have to do is say I'm an artist, and you have to believe me.

I guess I've always thought that programming was an art form of sorts, but until now I didn't consider myself an artist. Despite being amazed (and sometimes feeling guilty) that I actually get paid to play with and write about computers, I'd never before glommed on to the fact that I was just being paid to create commissioned works.

Now, when I feel like a pretentious poseur, taking peoples' money for having fun, I can just say I'm an artist. Apparently that's good enough. The last time I checked, there weren't any examination or licensing requirements for artists, so all I have to do is say I'm an artist and you have to believe me.

Of course, art isn't art until you label it as such. Sticking a whip in someone's rectum wasn't considered art until Robert Mapplethorpe documented it on film and said it was. It's the same thing with computer jockeying. It's not art until someone says so. Well, here it is: Computer jockeying is art. If you don't buy it, tough. I'm an artist, and in my artistically haughty way, I can ask: What the hell do you know about art anyway?

Coming Attractions

Now that I've established that I am an artist, and that what I am doing is indeed art, I need to have a show. Unfortunately, I have to do this part for free, at least until my grant from the National Endowment for the Arts comes in, or I get famous. I'd advise you to catch it now. Once I do get famous it'll cost you at least 20 bucks.

If you're interested in catching one of my works, I'm currently performing my magnum opus, "A Man in a Suit" — a multimedia performance utilizing language, the written word, computergenerated overhead projections and gray flannel to probe the boundaries of man-machine interactions and their temporal objectification in the form of consulting fees.

If I can get a grant, I expect shortly to begin work on "The Interoperable Tower of Babel" — an electronic performance-sculpture within which I will integrate all known computer network media and protocols into an incomprehensible whole signifying the limits of man's limited understanding of the primal forces of nature. Sleep deprivation and the abuse of Twinkies and central nervous system stimulants will lend the performance its variable pacing and illustrate the frenetic and indomitable quest of mankind for strength through knowledge.

If you're unable to attend a performance in person, I might suggest you catch "The Quasi-Journalist" performed right here on this page with monotonous regularity. As a matter of fact, you've just enjoyed another installment. See, art really does imitate life.

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